The BULLETIN

American Society of Hospital Pharmacists

OFFICIAL PUBLICATION OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS

DON E. FRANCKE, Editor

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v. 13-14
1956-57

VOLUME 13 JANUARY-DECEMBER 1956

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v. 13-14
1956-57

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American Society of Hospital Pharmacists

JAN-FEB 1956

VOLUME 13 NUMBER 1

EDITOR
Don E. Francke
University Hospital
University of Michigan
Ann Arbor, Michigan

ASSOCIATE EDITOR
Gloria Niemeyer
American Pharmaceutical Association
2215 Constitution, N.W.
Washington 7, D.C.

CONTRIBUTING EDITORS
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Bernard E. Conley
Leo F. Godley
William Johnson
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Paul Parker
Sister Mary Etheldreda
Eddie Wolfe

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SUBSCRIPTION RATE: In the U.S. $4.50 per year (six issues), single copies 75 cents; Foreign $5 per year, single copies 85 cents. CHANGES OF ADDRESS should be directed to the Division of Hospital Pharmacy, American Pharmaceutical Association, 2215 Constitution Ave. N.W. Washington 7, D.C.

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The American Society of Hospital Pharmacists, an affiliate of the American Pharmaceutical Association, is a national organization devoted to the profession of hospital pharmacy and dedicated to the improvement of pharmaceutical service in the interest of better patient care in hospitals.

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THE BULLETIN is published bimonthly at Hamilton, Illinois, by the American Society of Hospital Pharmacists in cooperation with the Division of Hospital Pharmacy of the American Pharmaceutical Association. Editorial office at 1313 East Ann Street Ann Arbor, Michigan. Entered as second class matter July 19, 1951 at the post office at Hamilton, Illinois. CONTRIBUTIONS will be accepted if they are of general interest to those in hospital pharmacy. The editors reserve the right to revise all material submitted, if necessary. The American Society of Hospital Pharmacists and the American Pharmaceutical Association assume no responsibility for the statements and opinions advanced by contributions to THE BULLETIN. Views expressed in the editorials are those of the editor and do not necessarily represent the official position of either the American Society of Hospital Pharmacists or the American Pharmaceutical Association.

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LETTERS

Education Number

DEAR SIRS: At the recent meeting of the Association's Committee on Hospital Pharmacy Practice held in St. Louis, the members noted particularly the recent Internship Number of THE BULLETIN OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS. The Committee unanimously voted to congratulate you as Editor of THE BULLETIN on this very valuable contribution.

The wealth of information this particular number presents concerning hospital pharmacy internships, the curriculum, and professional education abundantly demonstrates the broad scope of interest of the contributors to this issue. As the source of information for hospital pharmacists and their particular interest in professional development, the May-June number of THE BULLETIN should prove to be invaluable.

On behalf of the Committee, may I congratulate you as Editor of THE BULLETIN for your contribution to this effort.

SISTER M. FRANCISCANA, O.S.F., *Secretary*

Committee on Hospital Pharmacy Practice
Catholic Hospital Association
St. Louis, Missouri

Appreciation from Thailand

DEAR SIRS: Thank you very much for sending the books so promptly. I now have both THE BULLETIN and the reprint.

CHAWEE BUNNAG

School of Pharmacy
University of Medical Sciences
Phyathai Road
Bangkok, Thailand

Enthusiastic Reader

DEAR SIRS: I would like to subscribe to THE BULLETIN OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS. For some years before coming to this hospital, I was an enthusiastic reader of your journal from which I gleaned much valuable information. Will you please let me know the price of a subscription for one year.

SISTER CHARLES CLARE, *Pharmacist*

Saint Elizabeth Hospital
Sydney, Nova Scotia

Requests for Information

DEAR SIRS: Do you have information regarding colleges offering hospital pharmacy internships in conjunction with graduate work?

C. O. CHIORI

2900 Forest Ave.
Des Moines, Ia.

EDITOR'S NOTE: A listing of the internship programs in hospital pharmacy was included in the May-June (1955) issue of THE BULLETIN. This is available in reprint form from the Division of Hospital Pharmacy, American Pharmaceutical Association, 2215 Constitution Ave., N.W., Washington 7, D.C.

DEAR SIRS: In bibliographies to hospital pharmacy literature, I frequently see references to *The Hospital Pharmacist,* a Canadian publication. Could you send me the name and address of the publishers of this journal?

JACK S. HEARD, *Chief Pharmacist*

University of California Hospital
University of California Medical Center
Los Angeles, Calif.

EDITOR'S NOTE: *The Hospital Pharmacist* is a bimonthly publication of the Canadian Society of Hospital Pharmacists. It is available on subscription for two dollars and fifty cents per year. Orders may be addressed to The Hospital Pharmacist, 89 Glenmorris St., Galt, Ontario, Canada.

DEAR SIRS: In your Volume 12, (Mar.-Apr.) 1955 issue of THE BULLETIN, there is a reference to a Model-S Rotax Tablet Counter and Junior Marker Machine for making labeled tabs for identification purposes, etc. Would you be so kind as to advise me of the manufacturer of this equipment.

FRANK E. COOPER, JR.

Anderson Surgical Supply Co.
St. Petersburg, Fla.

EDITOR'S NOTE: The Rotax Tablet Counter, Model-S, is available from The Burnet Company, 100 Gold Street, New York, 38, N. Y. The Monarch Junior Price Marking Machine is supplied by the Monarch Marking System Company, Dayton 3, Ohio.

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EDITORIAL

Substitution and the Formulary System

by Don E. Francke

Hospital pharmacists in institutions which operate under the formulary system are sometimes accused of substitution. In these instances, use of the term substitution is limited to the dispensing of a different brand than is called for on the prescription, rather than to the broader meaning of the term which involves the dispensing of a drug which is a different chemical entity than that prescribed.

Hospital pharmacists do dispense brands other than those called for on the prescription. So do retail pharmacists under certain circumstances. Is this, then, not substitution, pure and simple? The answer is no. Any pharmacist, whether in retail or hospital practice, may at any time dispense a different brand of a drug with the knowledge and permission of the physician. This is one of the basic professional prerogatives of all pharmacists.

Hospital pharmacists do not dispense a different brand of a drug unless they are specifically authorized to do so. In hospitals operating under the formulary system, this authorization is obtained in writing from the medical staff. Drugs are accepted by their generic names and the pharmacist is authorized to dispense any one of a number of selected and approved brands of a given drug. In no case is there any intent or effort to deceive the physician. In fact, authority for the adoption of the formulary system arises from the medical staff; it is not a unilateral policy adopted and implemented by the pharmacy department.

The formulary system is not substitution for the same reason that product duplication is not product imitation. The element of deception is not involved in either the formulary system or in product duplication. In contrast, intent to deceive is paramount in both substitution and product imitation. The substitutor gives a product other than the one prescribed, without the knowledge or consent of the physician. The product imitator manufactures a preparation which resembles in size, color, shape, and/or taste the product of another manufacturer. The product imitation is produced with the specific intent to deceive, to be used without the knowledge of the physician in place of the product it seeks to imitate.

On the other hand, the formulary system involves no intent or desire to deceive. It is a system promulgated and agreed upon by members of the medical staff, a system implemented with their consent and operated with their knowledge. Deception is in no way involved.

Neither is deception involved with product duplication. Here a manufacturer produces a drug to capture a portion of the market, to engage in open competition with other manufacturers. Product duplication is often unwise, often works to the detriment of manufacturers who have done the basic work on a drug, often handicaps those pharmacists who of necessity must stock numerous brands of a drug, often tends to weaken or to destroy the very concept of brand names which manufacturers seek to promote — but it is never deceitful.

It is true that there is a relationship between the formulary system and product duplication. In fact, the formulary system is at present the only rational and effective answer to this problem and one which works well in hospitals. It is doubtful that it would be desirable or practical in retail practice. It is suitable to hospital practice for several reasons: 1. Physicians can decide whether or not the system is adopted; 2. If dissatisfied, they can change the policy to full recognition of individual brand names; 3. The pharmacist and medical staff have a close working relationship with well established lines of organization and communication which insures understanding cooperation; and 4. The formulary system is but part of a total plan designed to promote rational therapy in hospitals.

However, there is no relationship between the formulary system and product imitation. Hospital pharmacists have no desire to further the cause of those who manufacture imitation products.

The formulary system does not involve substitution. It, like product duplication, does not involve deception. It is a policy originated by and operated with the written approval of the medical staff.

Introduction

This is the conclusion of a study undertaken at the request of the American Society of Hospital Pharmacists. There is presented here a complete tabulation of material from the Survey conducted on a random sample of members in the ASHP.

The idea of a study of this type arose from a previous morale study, the SRA Employee Inventory, which was administered to the employees of the Pharmacy Department of the University of Chicago Clinics. The Survey, while providing demographic and economic data for the Society, also was designed with the purpose of providing background material for a career booklet on hospital pharmacy.

The author wishes to express his gratitude to the members of the Industrial Relations Center of the University of Chicago. I am also indebted to my wife for her splendid work in handling the mailing of the questionnaires.

Gerald M. Sass

Chicago, Illinois
September 1, 1955

PHARMACY SURVEY

by GERALD M. SASS

Question 1: How many years have you worked in hospital pharmacy?

ANSWER: Shown in Table II.

Table II. Number of Years Worked in Hospital Pharmacy by Male and Female Supervisors and Staff Pharmacists

	SUPERVISORS		STAFF PHARMACISTS	
YEARS	MALE	FEMALE	MALE	FEMALE
0 to 5	23	11	23	10
6 to 10	29	7	8	4
11 to 15	19	3	10	2
16 to 20	5	7	2	—
over 15	—	—	—	3
over 20	7	5	4	—
Total	83	33	47	19
Average years	10.4	11.5	8.6	7.9

National average 9.2 years

Question 2: Did you work in any other type of pharmacy before this? If yes, for how many years?

ANSWER: Yes 162; No 58. Average number of years worked in other types of pharmacy was 8.5 years.

Q 3: Since pharmacy school have you worked full time in any other profession or occupation?

A: Yes 31; No 190. Of those who answered yes, all worked less than five years in another occupation.

Q 4: Have you taken any additional courses since leaving pharmacy school?

A: Yes 100; No 89. Courses taken (in order of frequency): Pharmacy and Pharmacology, Chemistry, Psychology, Business or Personnel Administration, Bacteriology, Hospital Administration, Biochemistry, Languages, Speech, History, Typing, Philosophy. The following appeared less than three times: Biology, Physics, Shorthand, Mathematics, Political Science, Pathology, Radiology, Zoology, Use of Hormones.

Q 5: Do you do any teaching or formal instructing?

A: Yes 35.8 percent; No 64.2 percent.

Q 6: Are you a supervisor or assistant supervisor?

A: Yes 71.5 percent; No 28.5 percent.

Q 7: In this question hospital pharmacists were requested to supply information by filling in blanks under the headings as indicated in the following answers.

A: The answers to Question 7 are listed below.

a. Age. See Table III.

Table III. Percentage Distribution of Pharmacists by Age Groups and by Percentage of Men in Each Group

AGE	BY AGE GROUP	OF MEN IN GROUP
20 to 29 years	13.0	39.2
30 to 39 years	32.5	72.9
40 to 49 years	25.1	59.2
50 to 59 years	15.7	47.0
60 years and over	13.7	75.8

GERALD M. SASS is at the Industrial Relations Center, University of Chicago.

EDITOR'S NOTE: This Survey was undertaken at the request of Mr. Paul F. Parker who was the 1954-1955 Chairman of the ASHP Committee on Program and Public Relations. One of the objectives of the Survey was to obtain basic information upon which a career booklet for hospital pharmacy could be based.

Slight editorial modifications have been made in the forms of the questions and answers. This has been necessary because many of the answers represent tabulations of numerous individual replies.

b. Sex

Males 61.8 percent; Females 38.2 percent. Of the females 38.4 percent are nuns.

c. Marital Status

	Men	Women
Married	87.2%	34.9%
Single	10.5%	22.7%
Divorced	0.7%	2.2%
Widowed	1.6%	5.7%
Religious		34.5%

d. Children. 1.7 children per married couple.

e. Approximate Population of City in Which You Live.

Under 100,000	36.6%
100,000 to 499,000	28.8%
500,000 to 1,000,000	19.0%
1,000,000 to 3,000,000	10.2%
Over 3,000,000	6.4%

f. Membership in Civic or Fraternal Organizations.

Membership in some civic or fraternal group was listed by 73 percent of respondents. Religious were not included in this question. A list of groups follows:

Veterans of Foreign Wars
American Legion
Masons
Altrusa
Knights of Columbus
Elks
Parent Teachers Association
Shriners
Civilian Defense
Kiwanis
Republican and Democratic Women's Clubs
Hospital Guild
Lions Club
Eagles
Odd Fellows
Rho Chi
Kappa Psi
Junior Chamber of Commerce
Lambda Kappa Sigma
Rotary
Chi Omega
Sigma Chi
Phi Sigma
Delta Sigma
Boy Scouts

g. Salary

Average Salary for Men	$5,737.25
Average Salary for Women	$4,751.00
Supervisors (Male)	$5,960.50
Supervisors (Female)	$4,923.60
Staff (Male)	$5,186.60
Staff (Female)	$4,454.40

EDITOR'S NOTE: Referring to the Graph of Salaries for Male Supervisors appearing on page 30, it is noted that 22.5 percent of the male supervisors are earning $7,000 and up per year. Of this 22.5 percent, it would appear that 7 percent are earning $8,000 and above. In view of the fact that this figure is somewhat above the average salary for male pharmacists, it should be stressed as a significant trend.

Table IV. Average Salaries by Geographical Distribution

Washington, Oregon, California	$5,790.00
Montana, Idaho, Colorado, Utah, Wyoming, Arizona, New Mexico*	$5,522.00
South Dakota, North Dakota, Nebraska, Kansas, Wisconsin, Minnesota, Iowa, Illinois, Michigan, Indiana, Ohio	$5,377.00
W. Virginia, Virginia, N. Carolina, S. Carolina, Tennessee, Alabama, Georgia, Florida, Louisiana, Arkansas, Mississippi, Missouri, Oklahoma, Texas	$5,271.00
New York, Pennsylvania, Delaware, New Jersey, Mass., Rhode Island, Connecticut, Maine, Vermont, New Hampshire	$5,332.00

* This return was not large enough to provide accurate figures.

h. Hours of Work

Table V. Hours of Work Per Week by Male and Female Supervisors and Staff Pharmacists

	Supervisors		Staff Pharmacists	
Hours	Male	Female*	Male	Female
40	56.6%	70.0%	63.2%	77.7%
41 to 44	26.0%	16.7%	15.8%	12.3%
45 to 48	10.8%	6.7%	13.4%	——
Over 44	——	——	——	10.0%
Over 48	6.6%	6.6%	7.6%	——

* Nuns not included.

Question 8: Do you own your own home?

Answer: Men—Yes 64 percent; No 36 percent. Married Women—Yes 76 percent; No 24 percent. Average length of ownership is 8.6 years.

Q 9: Do you have an automobile?

A: Yes 90 percent; No 10 percent. 2 cars 3.6 percent. Most popular cars: Ford 1952, 1953, 1954 (18 percent); Chevrolet 1953, 1954, 1955 (18 percent); Luxury cars, Buick (5.6 percent) and Chrysler (5 percent). Nuns were not included in this or any question concerning possession.

Q 10: If your son or daughter were interested in pharmacy, would you encourage him or her to enter hospital pharmacy?

A: Yes 77.4 percent; No 16.8 percent; Don't know 5.8 percent—Blanks were rejected completely.

Q 10b: Do you feel that the general public underestimates your position in the medical field?

A: Yes 61.1 percent; No 28.1 percent; No opinion 10.8 percent.

Q 11: Please answer the following by checking a response in the multiple choice before each statement.

A:

a. Hospital pharmacists are generally paid
   - 5.3% very poorly
   - 51.0% poorly
   - 29.0% sufficient salary
   - 14.0% well
   - 0.7% very well

b. I receive the following amount of satisfaction from my work
   - 0 % none
   - 0 % little
   - 8.1% some
   - 45.3% much
   - 46.6% a very great amount

c. Hospital pharmacists have the following opportunity for advancement
   - 2.7% none
   - 37.5% little
   - 39.7% sufficient amount
   - 20.1% great amount

d. Hospital pharmacy offers the following amount of responsibility
   - 0 % none
   - 0 % little
   - 8.4% some, but not much
   - 26.8% a satisfactory amount
   - 64.8% a great amount

e. Hospital pharmacy is of the following importance to our national health
   - 0.5% no importance
   - 12.7% some importance
   - 86.8% great importance

Question 12: Would you advise pharmacy students to specialize in hospital pharmacy?

ANSWER: Yes 85.5 percent; No 9.0 percent; Blank 5.5 percent.

Q 13: Do you believe that hospital pharmacy is a growing and expanding profession?

A: Yes 95.0 percent; No 1.8 percent; No opinion 3.2 percent.

Q 14: In the following list of items, check those in which you think hospital pharmacy surpasses drugstore pharmacy.

A:

- 8.2% pay
- 83.5% working conditions
- 34.2% opportunity for advancement
- 93.2% chance to use education more fully
- 47.5% work companions
- 36.9% security
- 80.4% hours of work
- 89.9% interesting work
- 64.8% prestige

Question 15: Briefly, why did you choose hospital pharmacy as a career?

ANSWER:

- Interesting work
- Professional rather than commercial status
- Satisfaction
- Prestige
- Interest in medicine
- Offered a job
- Better use of education
- Working conditions
- Security
- Work companions
- Sick of being a salesman
- Desire to help sick
- Better hours
- Desire for greater home and family life
- Didn't know any better
- Didn't choose profession

Question 15b: If you had the opportunity, would you choose this profession again?

ANSWER: Yes 76.3 percent; No 13.2 percent; Blank 10.5 percent. Nuns not included in this response.

Table VI. Percentage of Supervisors and Staff Pharmacists Who Would Again Choose Pharmacy as a Profession

	Supervisors		Staff Pharmacists	
	Male	Female	Male	Female
Yes	75.6%	87.8%	75.0%	94.2%
No	18.6%	6.1%	15.4%	5.8%
Uncertain	3.7%	6.1%	9.6%	——
Blank	2.1%	——	——	——

Q 16: Do you feel that you are an integral part of the medical profession?

A: Yes 91.1 percent (31 of 31 nuns answered favorably); No 7.9 percent; Blank or unusable 1.0 percent.

Q 17: Some of the more important occupations and professions are listed below. Your opinion of the relative importance of these from certain points of view is desired. Please provide your opinion rather than your judgement of public opinions.

Please rank these groups in the order of their prestige, relative remuneration, and contribution to society. Use number 1 for the highest rank, number 8 for the lowest.

A: The replies to this question are tabulated in Table VII.

Table VII. Relative Ranks of Various Professional or Business Groups in the Opinion of Hospital Pharmacists

Profession or Occupation	Prestige	Relative Remuneration	Contribution to Society
Business Executives	2	2	7
Dietitians	8	8	8
Hospital Pharmacists	3	5	3
Physicians and Surgeons	1	1	1
Nurses	6	6	4
Teachers	4	7	2
Chemists	5	3	5
Drugstore Pharmacists	7	4	6

Discussion of Survey

Demographic Data

Age. There are few noteworthy factors in regard to age in the Survey. The highest return was in the age group of 30 to 39. This group was primarily male, as is the second largest group of 40 to 49. Inspection shows that up to the age of about 27, women appear in large numbers in the sample. However, beyond this age the number of women decreases until about the age 42. This pattern seems to indicate that women, upon graduation, will work a few years and then will leave the profession when married. A significant number then return, apparently after their children have matured. This pattern, if consistent in future years, may be of importance in securing sufficient pharmacists over a period of years.

The second obvious feature about age was in regard to the age of the males. Supervisors averaged 2.5 years younger than staff pharmacists, and there is a definite division among the supervisors, with a younger group of supervisors and an older group. Later we shall attempt to show that this young supervisorial group will also maintain a higher rate of pay than the older group.

It is interesting to note that the age distribution of this random sample corresponded quite closely to that of the Pharmaceutical Survey of the American Council on Education.

Marital Status. Working with a sex breakdown, we pointed out that a large portion of the men are married (87 percent). This, along with the divorce rate, is the only noteworthy feature. The divorce rate is far below the national average and is a good indication of stability. Of course, the sample is biased toward a more stable, older, and career oriented group of males than would be found in a random population sample in this country.

The average married couple have 1.7 children, which is fairly close to the national average. Few pharmacists reported large families.

Distribution in Population. Of necessity the average pharmacist lives in or near a fairly large city, since this is where his greatest opportunity is. The question was asked, "Approximate population of the city in which you live." Most people also included the name of the city or town. Over half of the surveys came from cities of less than 500,000.

Personnel. The statistics on the personnel concerned are self-explanatory. It might be noted that a large number of supervisors appears in the sample. This is due to two reasons. First of all, one might expect a large portion of the ASHP to be supervisors. Secondly, many hospitals have only one or two man pharmacy departments. Unfortunately a question in regard to this was not added to the survey. Thus we are somewhat handicapped in determining the exact nature of the supervisors and the extent of their duties.

Education. The idea that the hospital pharmacist is not well educated and cannot compete with retail pharmacists is not consonant with the findings of the survey. Over half the people reported that they have taken college or graduate courses. Of these, one-quarter took additional degrees or did graduate work of an extended nature. The pharmacists polled also were quite aware of the educational problems in pharmacy today. Many urged higher and more uniform standards in education.

Previous Work Experience. Although over 40 years in age, the average pharmacist had been working in a hospital only ten years, with many much less than this. Three out of every four have worked in retail or industrial pharmacy before entering hospital pharmacy. Thus there are few actual career men in hospital pharmacy. However, as we shall discuss later, these people had a common idea in mind, *viz;* to practice pharmacy as a profession rather than a trade.

Activities. In question 7 the respondents were asked to list memberships in civic and fraternal organizations. Naturally all respondents belong to the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS and the American Pharmaceutical Association. In addition, 73 percent listed membership in one or more groups. Few listed civic participation. In general, a slight apathy toward civic or public participation was noted.

Miscellaneous Economic Data. In regard to home ownership the number of home owners was extremely large, with over 90 percent of married men owning their own homes. Seventy percent of married women reported they owned their own homes. The average number of years of ownership was 8.6, which is also very high as compared with many professional groups.

There is nothing of note in regard to car ownership, except that a high proportion of pharmacists do own cars. The distribution of car makes was normal, except for the very low number of Plymouths.

Professional Position of the Hospital Pharmacist

One of the big questions involved in the Survey was the professional nature of hospital pharmacy, whether it is a distinct professional entity or more of a catch-all for those who do not like retailing or who cannot stand the competition in the retail labor market.

This section, then, will discuss the responses to the essay type questions on the Survey, covering first the favorable aspects, secondly discussing the problems, and thirdly, making recommendations for future action.

If any one word could be used to describe the nature of the answers, the word would have to be "progress." Almost every return cited progress or expansion as a reason for students to pursue a career in hospital pharmacy. Ninety-seven percent answered positively to question 13 which covered this subject.

MOST REVEALING WAS THE QUESTION ON CHOICE OF PHARMACY as a career. The answers were generally of two types. One expressed a reason or reasons for entering pharmacy, the other a reason or reasons for leaving retail pharmacy and becoming a hospital pharmacist.

In this study we were curious to see whether certain factors would *help to compensate* for the obvious pay scale inequalities between hospital and retail pharmacy. These were in evidence to a strong degree. There is a definite trend for the pharmacist to "professionalize" himself by entering hospital pharmacy.

PERHAPS THE MOST COMMON REASON given for leaving retailing was a desire to really function as a pharmacist, with all work directed toward helping the sick.

Also mentioned was the desire to work in an institution with professional associates. Many stated that they enjoyed being of service to the doctors who might not be familiar with new drugs.

Other reasons given were clean work surroundings, chance to use education more fully, a greater amount of job satisfaction, a sense of accomplishment, a great challenge, shorter hours of work, prestige, and greater variety of work.

The general feeling is that hospital pharmacy is a demanding, but a very rewarding field of endeavor in regard to a personal feeling of satisfaction and accomplishment.

The question was asked, "Would you choose this profession again?" Over 90 percent of the women said "yes," while a lesser group of the men, 77 percent, said they would also choose the same profession. This is an excellent response, when one considers the problems of hospital pharmacy.

In regard to all the questions which asked for an opinion of hospital pharmacy the return is very good. Almost all respondents expressed a great amount of satisfaction in their work and would encourage others (including their children) to enter hospital pharmacy.

The reasons given for the future expansion of hospital pharmacy were the rapid advances in new drugs, the new emphasis upon hospital pharmacists, and the increase in the number of hospitals. It is a common belief that the most efficient use of new drugs depends primarily on highly competent hospital pharmacists.

Supervisors

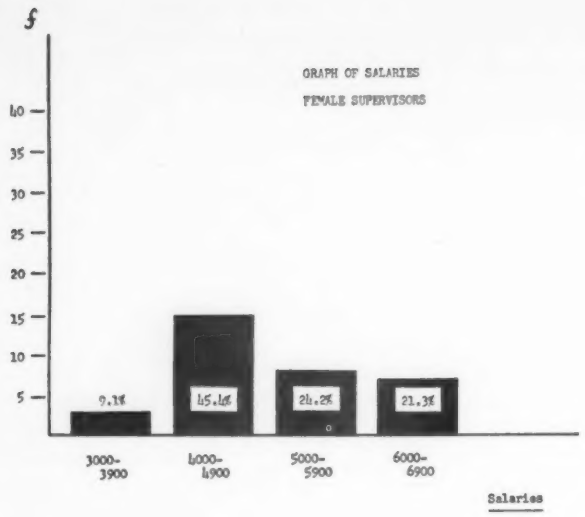
Two distinct groups of supervisors were in evidence. These groups are separated by both age and pay. The younger group (28 to 38) seem to be in great demand, partly because of their business administrative ability. This group also earns as much and sometimes even more than the older supervisors. The reason for this may be that hospitals are becoming aware of the profitable nature of pharmacy. This will tend to draw more high quality graduates into hospital pharmacy. What other effects it may have on the profession are a matter of conjecture. It is also interesting to note that many of the respondents suggested that students take some courses in business administration and personnel administration. Courses in purchasing, accounting, and budgeting were especially stressed.

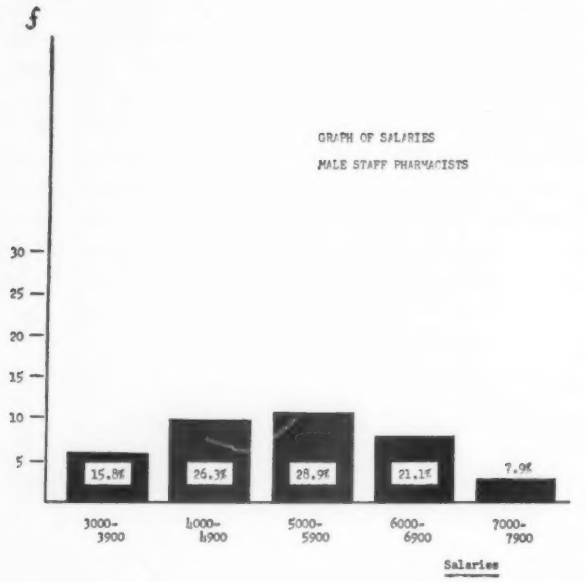
Problems Of Hospital Pharmacy

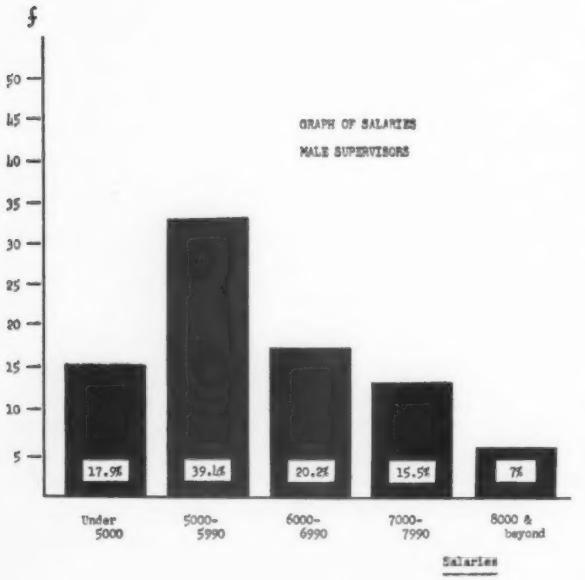
A few of the complaints and problems mentioned in the Survey will also be included here. Some of these conditions may exist only for a few, while others will be more general in nature.

PAY IS PROBABLY THE BIGGEST SINGLE FACTOR which militates against entrance into the profession of a larger group of superior graduates. In most cases the complaints are legitimate, and the existing salary scale is not valid compensation for the professional service exacted. A glance at the salaries listed earlier in this report will show just how low the wage scale is. It is doubly discouraging because one would expect the better paid pharmacists to be members of the ASHP. What wage scales exist outside the SOCIETY are a matter for conjecture. Undoubtedly, many hospital pharmacists are submarginal in regard to wages. Since these people are outside the SOCIETY, no practical means of estimating their salary exists.

A study of supervisors' salaries provides the basis for some interesting theories. It must be pointed out that these theories are not conclusively proven by the Survey; evidence is merely given to support them. Our biggest handicap is that a sample of perhaps two or three thousand is needed for accuracy.







First of all, we noted that most of the salaries (proportionately) that fell below both the mean and the median were in the older group of male supervisors. This may have been due to an error in the sampling, or it may be that the younger and more aggressive supervisors are earning substantially higher salaries. Ordinarily, as was the case among female supervisors, the older women generally were earning higher salaries. This emphasis upon younger supervisors, at higher pay rates, can be projected. The young supervisors who are earning low salaries are earning roughly the same salaries as the older group. Thus to retain these younger men, some sort of pay raise must be maintained in the future. Age will remove many submarginal supervisors, and thus the general graph of wages should rise proportionately if the demand for skilled hospital pharmacists continues; of course, we have no reason to doubt that this demand will decrease appreciably in the long run. Naturally, increases in pay will contribute greatly to alleviation of the pay problem, but another factor must be considered. That is the case of recruitment from the yearly graduation classes to maintain a flow of the most desirable pharmacists into hospital pharmacy. This will act to increase the general pay rise as indicated above.

RECRUITING DIRECTLY INTO HOSPITAL PHARMACY was discussed on many returned questionnaires. Opinion was divided as to whether this is a good or a bad policy. Many pharmacists feel that one or two years of retail pharmacy are necessary as preparation for a career in hospital pharmacy. The reason for this is not clear, but seems to be one of two things. First of all, the young graduate will find out whether he likes retailing and a career as a private, independent businessman. However, it seems that a person should have some idea of his interests in having a business of his own by the time of his graduation. As far as finding out whether he likes retailing, a more useful service is being rendered if one fully applies his education in the hospital pharmacy. The second reason given seems to revolve around the idea that retailing is the heart of pharmacy. In numbers this is true. In financial return this is true, and this seems to be the best argument of those who encourage students to enter retailing. However, in the actual practice of pharmacy as a profession the hospital is more the heart of pharmacy. Any student could gain valuable experience this way. The arguments seem to lean toward the career hospital pharmacist, always tempered of course by the problem of pay.

It might also be added here that one of the reasons advanced for the entrance of older men

into hospital pharmacy was that these men could or no longer wished to live in the competitive field of retailing; hospital pharmacy thus provides the opportunity for these men to practice their chosen profession. These men may also be willing to work for less money, since their financial obligations are less. If this is true, and these men continue to enter hospital pharmacy, then there should be a gradual increase in pay differential between staff pharmacists and their supervisors.

ANOTHER COMPLAINT WAS THE RELATIONSHIP between the hospital pharmacist and the hospital administrator. Some pharmacists feel that they should have greater independence for their departments, not only in supervision, but also purchasing and getting credit for the pharmacy profits. A few also said the administration usually followed a policy that did not encourage the chief pharmacist to act on his own initiative to promote thrift and profit.

Many hospital pharmacists feel very strongly that there is a gap between pharmacy and the other hospital professionals. They feel that the pharmacist is not accepted by the physicians, especially. They then go on to cite cases such as separate lunch rooms, separate social functions, and many doctors who do not consult the pharmacist in regard to any new or little used drug.

The above factors tend to destroy the prestige and pride of a group. The general results of the Survey indicate that many pharmacists act very defensively in regard to their profession.

A FINAL PROBLEM THAT WAS MENTIONED was in regard to education. There was a variety of suggestions given in regard to course changes and lengthening the required program. Besides recommendations in regard to pharmacy courses, courses in business and hospital administration were also suggested as being almost a necessity.

We also observed an almost unmentioned problem. That is the apathy of hospital pharmacists toward civic and political action and community participation. This is a "must" in any program of public relations.

Suggested Program

Hospital pharmacy's biggest problem is pay, and every effort should be made to alleviate this condition. In addition, a public relations program should be executed, as much as possible on a personal basis. Pharmacy should be carried to the public by individuals, especially by active participation in community life. If people can find out about hospital pharmacy directly from pharmacists, great advances can be made. Social psychology texts are full of examples of public relations programs which have been futile, simply because of the manner in which they were executed.

If possible, a complete survey should be undertaken to cover all ASHP members. After this a study should be made to determine hospital pharmacy conditions outside of the ASHP. This material would be invaluable in planning further programs.

Every effort should be made to expand the membership of the ASHP. There are great possibilities for public relations simply by encouraging active, expanded membership.

Finally, an accurate, factual career booklet should be directed at pharmacy students and perhaps also at young hospital pharmacists. It is important that the usual trite generalities be avoided in this booklet. Its success will depend upon its credibility, not upon deception.

Table I. Survey Tabulation of Percent Returns by State

Return by States					
Alabama	87.5%	Maryland	50.0%	Rhode Island	100.0%
Arizona	43.0%	Massachusetts	44.4%	South Carolina	33.3%
Arkansas	100.0%	Michigan	69.2%	South Dakota	100.0%
California	39.0%	Minnesota	62.5%	Tennessee	43.0%
Colorado	50.0%	Mississippi	50.0%	Texas	91.0%
Connecticut	33.3%	Missouri	44.2%	Utah	50.0%
Delaware	75.0%	Montana	100.0%	Vermont	0.0%
District of Columbia	80.0%	Nebraska	75.0%	Virginia	43.0%
Florida	100.0%	Nevada	0.0%	Washington	50.0%
Georgia	50.0%	New Hampshire	100.0%	West Virginia	0.0%
Idaho	0.0%	New Jersey	26.3%	Wisconsin	36.4%
Illinois	46.0%	New Mexico	100.0%	Wyoming	0.0%
Indiana	46.0%	New York	38.2%	*Totals*	
Iowa	66.7%	North Carolina	43.0%	Questionnaires	487
Kansas	66.7%	North Dakota	0.0%	Missent	37
Kentucky	40.0%	Ohio	45.2%	Maximum usable	230
Louisiana	57.0%	Oklahoma	57.1%	National Average	51.1%
Maine	50.0%	Oregon	50.0%		
		Pennsylvania	18.1%		

EQUIPMENT USED IN BACTERIAL FILTRATION

by LOUIS P. JEFFREY

THE TERM STERILIZATION, as used in medical and pharmaceutical practice, means a process whereby the destruction or removal of all living organisms and their spores is complete. This process of sterilization may be accomplished by one of several different official methods, including steam under pressure, dry heat, and bacterial filtration. Probably the most effective and practical method of sterilization is steam under pressure using an autoclave. Next in importance is the use of hot air in an oven. This type of sterilization is useful primarily for the sterilization of water-insoluble powders, oils, and other materials not penetrated by steam.

Both of these methods have one essential limitation. They may not be used for the sterilization of solutions of thermolabile substances. Hence, other methods have to be used for the sterilization of these solutions.

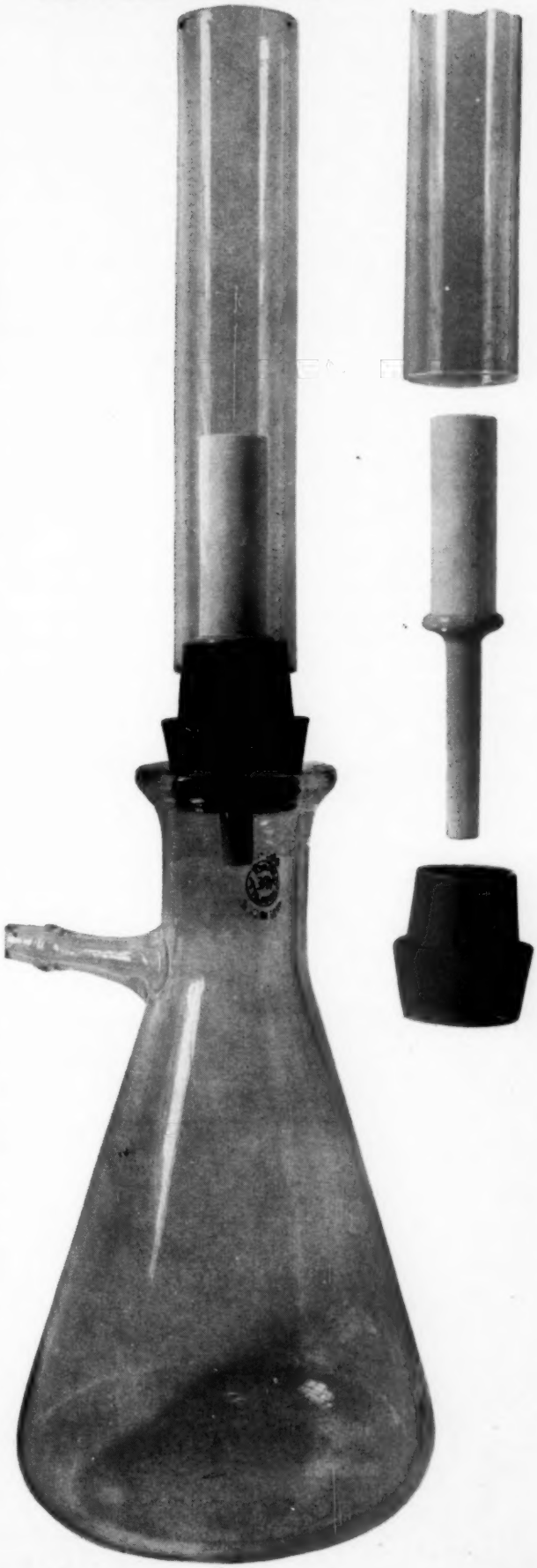
Several methods have been suggested, such as the use of *gamma* or cathode radiation, ultraviolet radiation, ultrasonic bombardment, or gas sterilization with ethylene oxide. These techniques generally require expensive installations. In addition, they present limitations on their usefulness.

Since it is practical and relatively simple, sterilization of solutions by filtration is somewhat common practice. Bacterial filtration then, is the sterilization of solutions by passage through filters which remove bacteria and provide a bacteria-free filtrate. These filters effectively retain bacteria and their spores but do not retain viruses. Therefore, it is necessary that all ingredients of a solution to be sterilized by filtration, be sterilized to the extent that it is feasible, by moist or dry heat, prior to formulation. Mixing should be conducted in sterile vessels. The preparation of slowly soluble or volatile substances should be performed in stoppered sterile containers, using a magnetic stirrer. This method obviates contamination with dust and other impurities of the air and also, prevents any loss of volatile ingredients. Also, it is essential that the solution bacterially filtered contain a bacteriostatic agent, such as chlorobutanol. For example, let us consider the following preparation which should be sterile.

LOUIS P. JEFFREY is Pharmacist-in-Chief, Department of Pharmacy, Albany Hospital, Albany, N. Y.

The author wishes to gratefully acknowledge the assistance of JOHN T. MURPHY, Pharmacist-in-Chief, Massachusetts General Hospital, Boston, Massachusetts, in the preparation of this paper.

Selas VFA series filter unit, shown assembled and "exploded."



: Morton bacterial
r apparatus, complete unit.

Chloramphenicol	2.5 Gm.
Polysorbate 80	20.0 Gm.
Sodium Chloride	1.0 Gm.
Chlorobutanol	0.5 Gm.
Distilled Water, to make	100.0 ml.

The preparation of this formulation should be as follows. The chloramphenical is sterilized in an appropriate oven at 121° Centigrade for 15 hours, or overnight. The polysorbate 80 is sterilized by the same method. Chlorobutanol and sodium chloride are dissolved in the desired volume of distilled water and autoclaved in a sealed container. The several ingredients are then combined in a sterile mixing device and filtered through a sterile bacterial filter assembly. Then, sterile containers are filled with this bacteria-free filtrate, closed with sterile stoppers, and sealed.

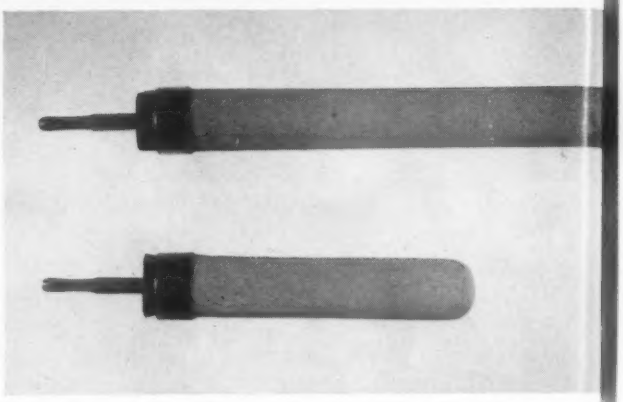
It is important that the filling operation be conducted under strict aseptic conditions. An effective method for this filling operation is a special hood which we shall discuss later.

TYPES OF BACTERIAL FILTERS

Unglazed Porcelain Filters

A. Selas Filters. This is a candle-siphon type of filter. Filtration with a Selas filter is based upon a technique which employs a Kimble glass tube which is shaped to fit over the filter candle, and is provided with a stopcock, in order to release air, as well as with a series of liquid inlet openings around the bottom of the tube. Because the candle is continually in contact with the solution to be filtered, the use of the tube insures rapid filtration, regardless of the liquid surrounding the siphon. In order to use this siphon, the stopcock is opened, the mantel is filled with solution above the top of the candle, and then the stopcock is closed. This siphon will stay primed until all the solution has been filtered from the mantle to within one quarter of an inch from the bottom.

Filters of the Berkefeld and Mandler types



B. Berkefeld and Mandler. These filters are also candle-type filters with metal fittings and a glass mantle. The advantage of this type of filter is that large volumes of solution are filtered rapidly because of the large filtering area. For example, a 10″ x 2″ candle provides approximately 63 square inches of filtering surface.

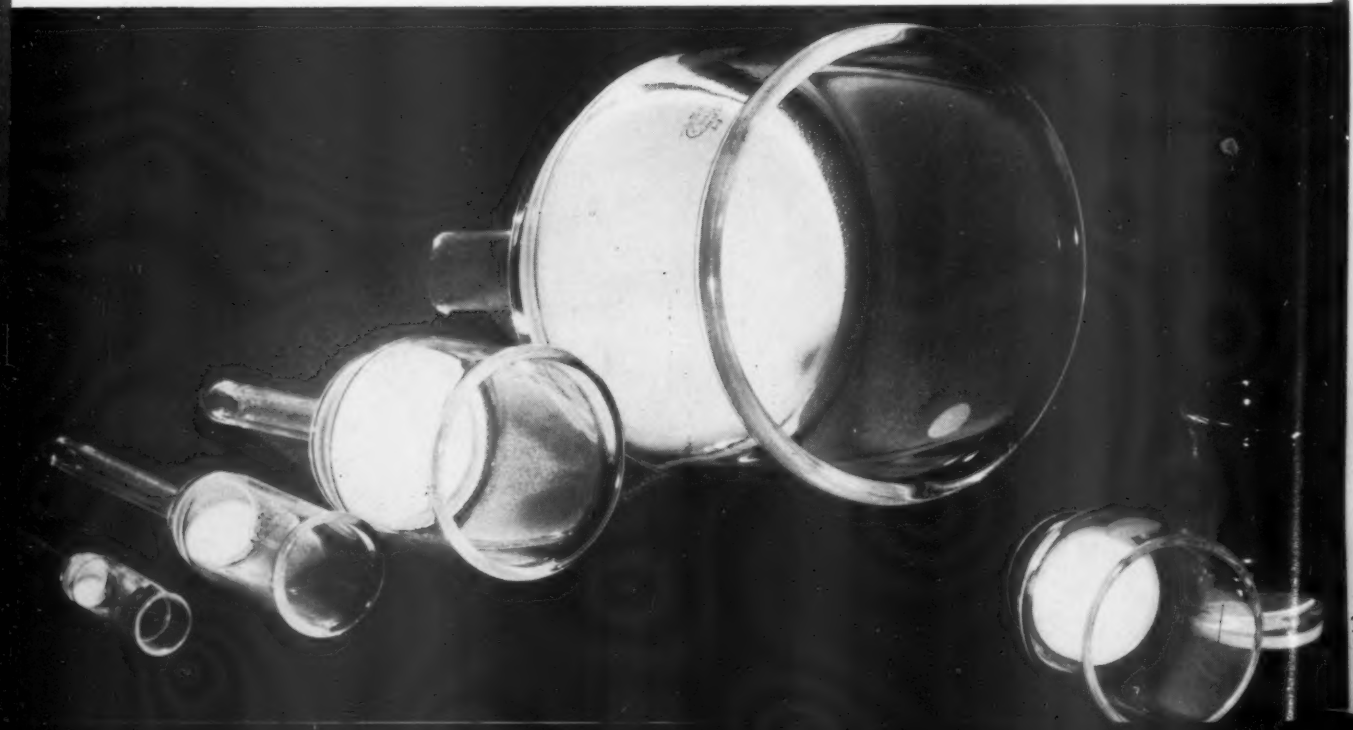
The disadvantages of this type of filter are as follows:

1. There is an appreciable loss of solution when used for small volumes of liquid because of the absorption of the solution by the candle and because of the metal collar of the candle.
2. The filter is difficult to clean.
3. These filters must be checked frequently for any cracks in the candle.
4. They are not suitable for the filtration of solutions affected by metals.
5. Ordinarily, positive pressure filtration is not adaptable to this type of filter assembly.

Frittered or Sintered Glass

Morton Frittered Glass Filters. The application of frittered glass filters was first introduced by Morton. This filtering assembly made completely

Various Corning Buchner-type glass filters. These units may be used for routine filter operations.



of glass, consists of a Buchner type funnel which has a sintered glass disc fused into the base portion. This funnel has a ground glass shell adapter which connects to the filtering receptacle. The filtering receptacle is a modified Erlenmeyer flask which has an outlet at the base of the flask allowing for the delivery of the bacteria-free filtrate without disassembling the unit. The suction is attached to the air filter. The entire unit wrapped in parchment paper is autoclaved prior to use for fifteen minutes at 121° Centigrade.

The fritted glass disc in the filter comes in various sizes—coarse, medium, and fine. These are used for filtering extraneous material and precipitates. For bacterial filtration, an ultrafine fritted filter is needed. Also, the Buchner funnel comes in sizes varying from a few ml. to several hundred ml.

Ver Tis Filters. The advantages of these types of filtering units are as follows:

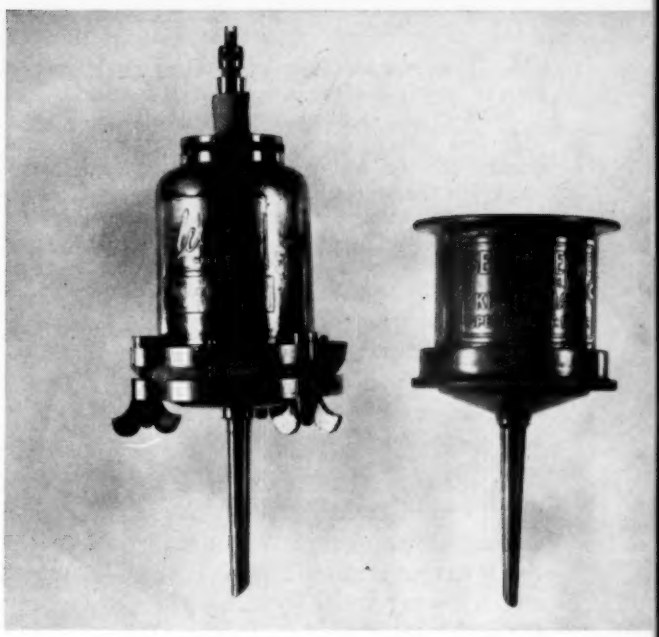
1. These all glass filters are suitable for the filtration of solutions affected by metals.
2. The filter disc is built-in as a part of the total structure, thus eliminating the additional expense of auxiliary aids such as discs or pads.
3. The complete glass assembly eliminates the disadvantages of using rubber connecting parts.
4. In using the Morton Filter, small quantities of liquid may be filtered with little or no loss of solution through the filtering medium. Also, it should be noted that this filter may be cleaned chemically by using a solution of sodium dichromate in technical sulfuric acid as well as bacteriologically by sterilizing in an autoclave.
5. Because of the large filtering surface the Ver Tis permits rapid filtration.

The disadvantage of these filters is that they become plugged when unfiltered solutions contain a great deal of impurities. This disadvantage can be obviated by over-laying the fritted disc with sterile asbestos suspended in liquid. Finally, these filters are limited to negative pressure with the exception of the Ver Tis.

Asbestos Disc Type Filters

Seitz Filters. The Seitz filter is made of silver plated bronze or stainless steel. It utilizes the principle of the asbestos filtering pad. The apparatus is composed of several parts; essentially, the filtering receptacle which holds the unfiltered liquid contains a filter paper separating a disc from the metal sieve. The filter paper and the discs are clamped together tightly between two metal rims by screw clamps.

In order to prepare the equipment for filtration, the apparatus is cleaned, washed, and rinsed with distilled water. The metal filter is then attached to an aspirating flask and all exposed parts are wrapped in parchment paper before sterilization. The entire assembly is autoclaved for fifteen minutes at 121° Centigrade. The unit is dried by the heat from the jacket. After the unit has cooled, the clamps which were held in place by light tension in order to permit steam infiltration, are tightened. When the unfiltered solution is placed in the filter receptacle, suction is applied at the air filter and the resulting filtrate is bacteria-free.



Two types of Seitz filters. The one on the left is used for filtration by positive pressure. On the right is the more commonly employed Seitz filter which is used by negative pressure.

The Seitz filter can be obtained in different sizes. These range from a capacity of 10 ml. to 500 ml. Also, the disposable pads are available in a range of porosities. The coarse pad allows all bacterial cells to pass through and removes only foreign particles in the solution. The medium grade pad retains all but the smaller bacteria, while the fine grade pad renders the filtrate bacteria-free. These asbestos pads absorb some of the solutions. For instance, the asbestos pad for the 100 ml. Seitz filter retains approximately 5 ml. of solution. This is an important consideration when relatively small amounts of liquid are being filtered.

The advantages of the Seitz filter are as follows:

1. It is easy to clean and, because a new disc is used for each filtration, contamination is obviated.
2. This filter can be used with positive or negative pressure.

In spite of the advantages of positive pressure filtration, negative pressure seems to be universally used in practical work. Positive pressure reduces the evaporation of filtrate. If nitrogen is used to provide the positive pressure, it eliminates the possibility of absorbing carbon dioxide or other gases from the air. Nitrogen is generally used because it is inert and inexpensive.

The disadvantages of the Seitz filter are:

1. There is a loss in volume of the liquid to be filtered by absorption through the filter medium.
2. There is a limited area of filtration.
3. This filter is not suitable for the filtration of substances affected by metals; for example preparations containing phenylephrine hydrochloride or epinephrine bitartrate.
4. The possibility of contamination of the filtrate with asbestos shreds exists.
5. The disc may be perforated by the stream of solution on the disc.

The last two disadvantages may be removed by placing circular sheets of hard filter paper of the same diameter of the asbestos disc, above and below disc.

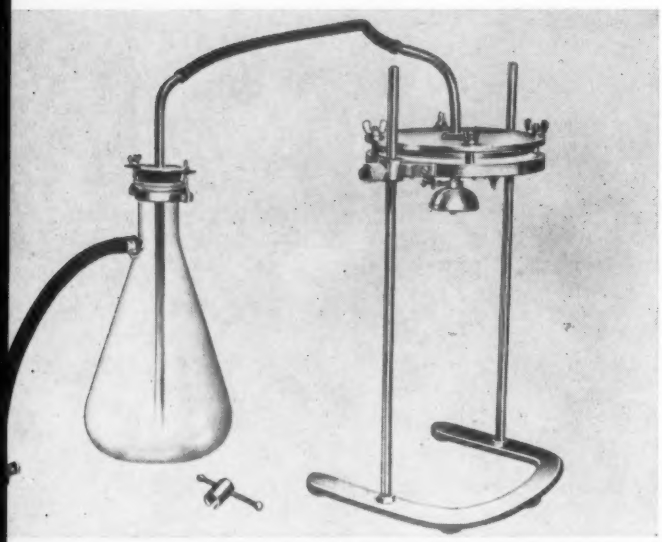
Ertel Filters. The Ertel filter made completely of metal consists of a reservoir flask, a filtering unit, and a receiving vessel. The unfiltered liquid is in the reservoir flask and is transferred to the filter and receiving vessel by using nitrogen to provide the positive pressure in the reservoir flask. Nitrogen is permitted to enter the flask at a controlled rate of flow, not greater than twelve pounds per square inch. This filter, which performs a double filtration, is composed of two parts. The top portion contains two circular asbestos discs separated by a collecting ring. The liquid must pass through the filter sheet, accumulate in the collecting area between the sheets, and then, as a result of the accumulated pressure, it will pass through the lower filter sheet. The two metal screens remove any asbestos fibers which may have passed through from the pads. This relatively pyrogen-free filtrate must then be passed through a built-in stone fiber eliminator made of alumden. Before using the fiber eliminator it is washed and placed in an oven for one hour at 121° Centigrade. This sterilizes and dries the stone so that pyrogen production within the interstices is halted. The stone which is located in the bottom half of the filter prevents any fibers from passing out of the filter. In preparing the equipment for a filtration process, the procedure to follow is similar to that described under the Seitz filter.

The advantages of the Ertel filter are:

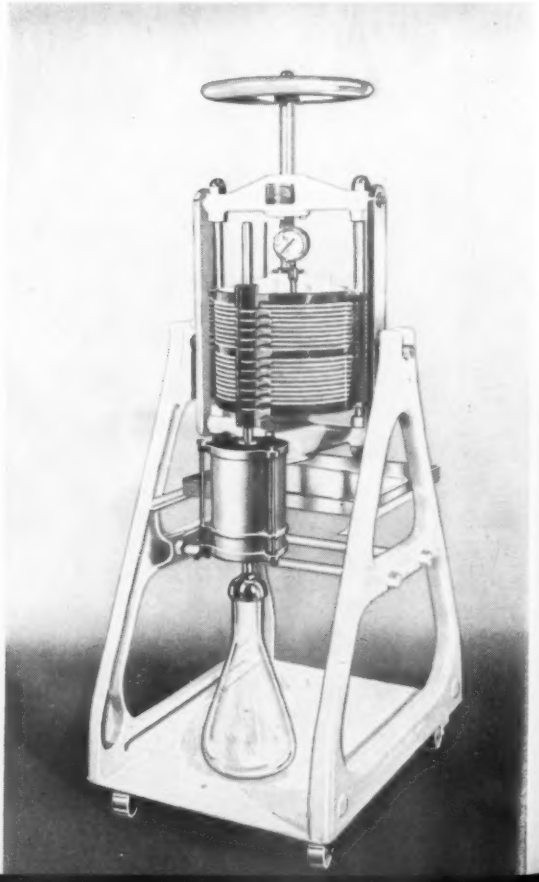
1. It is efficient in filtering viscous liquids which require positive pressure.
2. There is little or no evaporation of the liquid being filtered.
3. The stone filter prevents perforation of discs and contamination of filtrate with asbestos fibers.
4. The use of two asbestos discs adds security.
5. The use of nitrogen as a source of positive pressure removes the precipitation of substances such as soluble barbiturates which is possible with filters using negative pressure.
6. In preparations which tend to foam, this is the method of choice.

The disadvantages are:

1. It is not suitable for the filtration of small volumes of liquid.
2. Also, it is not suitable for solutions of substances affected by metals.



Ertel model 42 pyrogen-retentive filter, a laboratory type with a flow rate of 1,000 ml. per minute.



Ertel filter model EDB is suitable for filtration of large volumes of intravenous fluids. Several other models ave available.

Suggested Other Equipment

Hood. As a part of the total equipment, the use of a special hood for the filling of these sterile products should not be overlooked. This is a piece of equipment which may be used instead of an air-conditioned room. It consists of a unit which electrically precipitates dust and bacteria from the air that is being drawn in. The purified air is then pumped across the ultraviolet sterilizer tubes, which are shielded from the operator, into the filling hood under a pressure that is greater than the pressure of the atmosphere in the room. This feature prevents the contaminated air in the room from entering the hood during the filling operation.

At the beginning of every work day, the interior of the hood should be thoroughly washed with hexachlorophene in isopropanol and the hood set in operation. From past experience it has been noted that more efficient operation is obtained by running the unit continuously during the work day, even if it is not in continuous use. Preparatory to the filling operation, the operator scrubs according to the technique recommended by Blank, *et al*[2] using sterile cotton gloves after the scrub. To prevent the wetting of the gloves by the solution being bottled, a filling attachment, appropriate in size for the bottle, is used. A representative number of the filled and sealed units should be sent to the bacteriology laboratory for control purposes.

Automatic Pipetting Machine. The automatic pipetting machine is specifically designed for handling liquids under aseptic conditions. The assembled unit consists of a valve assembly, glass syringe and adapter, rubber tubing and a delivery tip. This unit may be wrapped in parchment paper and then sterilized by steam under pressure for fifteen minutes at 121° Centigrade. This pipetting machine is used to fill aseptically ampuls and vials. The syringe valve assembly permits accurate dispensing of liquid preparations.

Magnetic Stirrer. The magnetic stirrer is an electrically operated mixer. It is particularly useful as an auxiliary aid in putting chemicals into solution. A small plastic covered magnet is placed in the liquid to be stirred. When the current is applied, the magnet follows the motor driven magnet with stirring and subsequent solution is effected.

Conclusion

In conclusion, I should like to say that bacterial filtration is essential in a hospital pharmacy. It has a place in large manufacturing processes and in the extemporaneous compounding of various sterile preparations. But a basic consideration not to be overlooked is that without the proper accessory essential equipment in handling the bacteria-free filtrate, the possibility of contamination is ever present.

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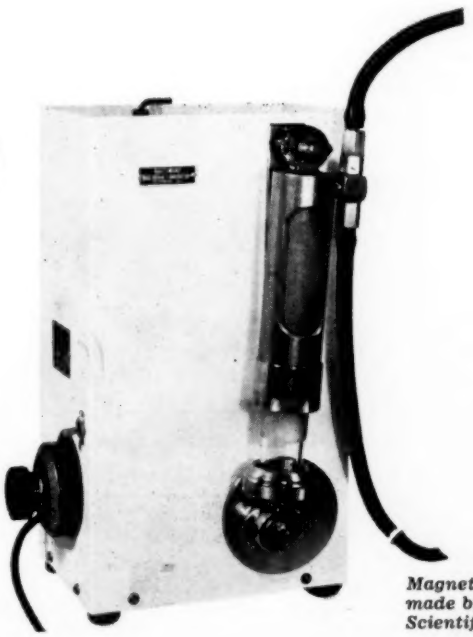
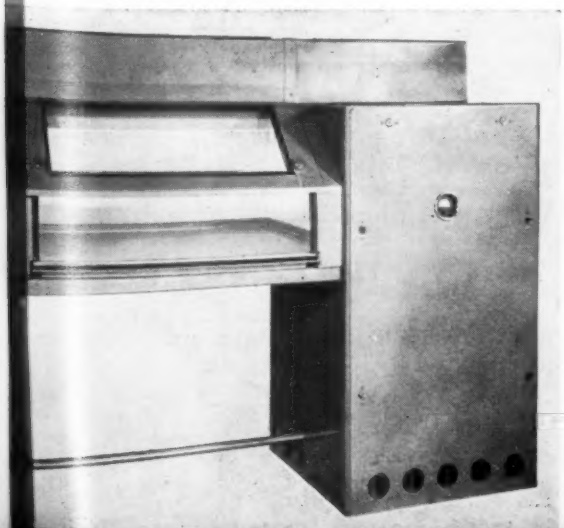
2. Blank, *et al*: *Surg. Gynecol, Obstet. 91*:577, 1950.



Automatic Pipetting Maching Model 40, fitted with A-100-SS assembly. Distributed by Baltimore Biological Laboratory, Inc.

Sterile products hood, made by the Baker Company, Inc., Maplewood, Maine.



Magnetic stirrer No. 18852 made by the Central Scientific Company

formulation and testing of silicone vanishing cream skin protectives

by Joy Bickmore Plein *and* Elmer M. Plein

HOWEVER EFFICIENT AS A BARRIER a protective skin cream is, it is effective only so long as the patient routinely applies it to his skin. Because of its creamy consistency, sheen, and cosmetic properties, a vanishing cream possesses excellent patient appeal. This study was undertaken in order to determine whether the silicone oils could impart sufficient water-repellent properties to a vanishing cream that the product would be an efficient barrier.

The authors wish to thank the Dow Corning Corporation for furnishing the DC 200 Fluids, the International Wax Refining Corporation for furnishing the Synthetic Japan Wax, Darling and Co., for supplying the Pearlstearic Acid and L. Sonneborn Sons, Inc. for furnishing the Microcrystalline Wax used in this study.

Joy Bickmore Plein is a Graduate Student and Elmer M. Plein, Ph.D. is a Professor of Pharmacy, both at the University of Washington, Seattle.

Lesser[1] classifies barrier creams into various groups according to their mode of action: (a) pore-filling products, typified by the vanishing creams, (b) products containing a large portion of inert powders which adhere to the skin and form a physical barrier against irritants, (c) greasy preparations which cover the skin and fill the pores, (d) "invisible glove" preparations which form a protective film on the skin, and (e) special preparations which protect against specific irritants.

By combining silicone oil (to form a protective film) with stearic acid (for pore-filling properties) it was felt that a good water-repellent cream might be produced, even though vanishing creams are basically oil-in-water emulsions.

Methods of Testing Barrier Creams

Various tests of barrier-cream efficiency have been devised. In *in vivo* tests, patients with known sensitivities have been inuncted with the cream and then exposed to the contact allergen.[2, 3, 4, 5, 6]

The value of protective films has been tested *in vitro* by application of the cream to glass slides or glass surfaces. In one such test[1] the cream was spread on a glass surface and allowed to dry, and then the film formed was carefully removed and immersed in liquid. The criterion was the time required for the film to disintegrate. In other evaluations, conducted by Finnerty[3] and by Suskind,[5] thin films of the protective cream were applied to one side of glass slides and then the slides were immersed in the irritant liquid. In these studies also, the films were examined at various intervals. Another method of testing was to shake the cream with aqueous solutions. Water-repellent creams were not dispersed in the water.[1]

Another *in vitro* testing method which was devised by Swartz *et al*[7] and later used by Eisner[8] and by Denton *et al*[9] essentially consists of placing a film of the test ointment between two sheets of filter paper. The lower filter paper is impregnated with an indicator and on the upper filter a chemical solution is placed. The penetration of the solution through the ointment produces a change in the indicator paper.

A non-clinical *in vivo* method of testing barrier creams was devised by Shaw and Crowe.[10] They compared a series of commercial and official barrier creams and ointments by drawing a letter on the dorsum of the hand with a water-soluble ink. The barrier cream was applied over the ink mark and then the creams were evaluated on a basis of the washing time necessary for removal of the ink. This procedure was used for a soap and water solution and for light cutting oils. The barrier effect of these preparations for heavy cutting oils was tested by painting the skin with phenolphthalein, applying the barrier cream over the painted area, and then exposing the inuncted skin to the cutting oil. After a two-minute period, a dilute potassium hydroxide solution was applied to the same area, and the absence of a barrier film was noted by the purple color which developed.

Experimental

I. Formulation of Creams

Several silicone vanishing cream formulas have been devised and considered in this report. Silicone Vanishing Cream No. 1 was prepared with Microcrystalline Wax according to the following formula:

Silicone Vanishing Cream No. 1

	% by Wt.
Microcrystalline Wax	5.0
Stearic Acid (Pearlstearic)	15.0
DC 200, 1000 cts.	20.0
DC 200, 30,000 cts.	20.0
Sodium Borate	2.0
Tween 20	1.9
Arlacel C	3.1
Methylparaben	0.025
Propylparaben	0.015
Distilled Water	33.0
	100.0

Prepare in the customary manner. Suspend the Arlacel C in the oil phase and the Tween 20 in the aqueous phase. Mill the cream three times in an ointment mill.

The ratio of emulsifiers was calculated to produce an H.L.B. value of 8. This cream may be a little too stiff, but it applies well, is not especially sticky, and leaves a good film on the skin. It was stable after two years' storage at room temperature.

After this formula was developed, further work by the authors[11] showed that Synthetic Japan Wax produced better mixtures with silicone oils than did Microcrystalline Wax. Therefore, 2 percent Synthetic Japan Wax was used in place of 5 percent Microcrystalline Wax in formulating Silicone Vanishing Cream No. 2.

Silicone Vanishing Cream No. 2

	% by Wt.
Synthetic Japan Wax	2.0
Stearic Acid (Pearlstearic)	15.0
DC 200, 1000 cts.	20.0
DC 200, 30,000 cts.	20.0
Sodium Borate	2.0
Tween 20	1.9
Arlacel C	3.1
Methylparaben	0.025
Propylparaben	0.015
Distilled Water	36.0
	100.0

Mix in the customary manner.

Although it is not a vanishing cream, Silicone Gibson Base, previously reported by the authors[12] is also included in this study because it is an O/W emulsion cream with pleasing cosmetic properties.

Silicone Gibson Base

	% by Wt.
Cetyl Alcohol	16.0
DC 200, 1000 cts.	40.0
Sodium Lauryl Sulfate	1.0
Methylparaben	0.025
Propylparaben	0.015
Distilled Water	43.0
	100.0

Nine additional silicone vanishing creams were prepared by varying the proportions of the several ingredients listed in Table I, which table also includes comments about the individual creams. These creams were prepared by melting the oil-soluble ingredients, heating the mixture of them to 80° C., and then slowly adding the aqueous solution of water-soluble constituents which had also been warmed to 80° C. The creams were stirred until they were cool, and the following day they were milled twice in a Ross, triple-roll ointment mill.

II. Evaluation of the Efficiency of Barrier Creams

Ten silicone vanishing creams prepared according to the formulas presented above, Silicone Gibson Base, wool fat, white petrolatum, Silicote®, Pro-Derma®, On Hand®, and Covicone®, were tested as barriers for aqueous solutions.

In Vitro Test

The ends of applicator sticks were immersed to a depth of 43 mm. in a 1 percent aqueous solution of malachite green for a period of 10 seconds and then air dried. A film of barrier cream was spread over the colored portion of each applicator stick by rotating it through a small quantity of the cream held on a spatula. The amount of cream film on each stick was adjusted to be between 90 mg. and 100 mg. The film-treated sticks were then placed in 25 ml. quantities of distilled water contained in volumetric flasks and allowed to remain in contact with the water for a period of six hours. Triplicate determinations were made for each cream. At the end of the six-hour period, the sticks were withdrawn from the solution, and the amount of malachite green in each solution was determined by visually comparing the color of the solution with the color of standard solutions made to contain from 0 to 50 micrograms of malachite green in each 25 ml. The electrophotometer had been used previously in a similar comparison, but the creams contribute a cloudiness to the solution which could not be removed by filtration or solvents.

The results of this test are recorded in Table II with the silicone vanishing creams and other products tested, arranged in the order of their protective efficiency—the best at the top of the list and the one which allows the most reagent to dissolve in the aqueous phase at the bottom of the list.

In Vivo Test

Strong Iodine Solution (5 percent) was applied to skin of the forearm in areas of about 1-inch diameter. The solution was allowed to dry and then the area was inuncted for 1 minute with a 2-gram quantity of the silicone cream. The excess cream was blotted off with cleansing tissue and then one drop of a 10 percent suspension of soluble starch was applied over the area. The time necessary for the appearance of blue color was noted, and the solution was allowed to remain on the area for one minute and was then blotted. The in-

TABLE I. FORMULAS AND SOME PHARMACEUTICAL PROPERTIES OF SILICONE VANISHING CREAMS

The numbers represent percentage of weight of each constituent.

Silicone Vanishing Cream	Pearl-stearic Acid	Cetyl Alcohol	Syn. Japan Wax	DC 200 1000 cts.	Sod. Lauryl Sulf.	Pot. Hydrox.	Water	Comments on Pharmaceutical Properties
No. 3	10	10	2	20	0.5	0.5	57.0	Good Repellent, too stiff, not creamy.
No. 4	10	1	1	20	0.5	0.5	67.0	Slightly creamy, better esthetically than 3, 5 & 6
No. 5	15	1	1	20	0.5	0.5	62.0	Good, slightly creamy.
No. 6	20	1	1	20	0.5	1.0	56.5	Rather dry, slightly creamy
No. 7	10	1	1	20	0	0.5	67.5	Creamy, soft, applies nicely.
No. 8	10	1	2	20	0	0.5	66.5	Creamy, soft; may be slightly "soapy".
No. 9	10	0	2	20	0	0.5	67.5	Very soft; creamy applies nicely.
No. 10	10	1	0	20	0	0.5	68.5	Very soft; creamy applies nicely.
No. 11	10	2	0	20	0	0.5	67.5	Very soft; creamy applies nicely.

tensity of the color which remained was then evaluated as 0, +, ++, +++, ++++, as it increased in intensity. The time necessary for the color to develop varied from two to twenty-seven seconds. These tests were conducted in triplicate and both the time necessary for the reaction and the intensity of the color produced were considered in ranking the various barriers in order of their protective ability as shown in Table II.

Discussion

The turbidity of the solutions used in the *in vitro* test reduces the sensitivity of this test; but since presence of a turbid solution indicates that the film of cream is disintegrating or partially dissolving, the turbidity is a useful indication that the partially opaque solutions result from testing the less effective barriers. The solutions showing turbidity were compared with clear standards and also with standards made turbid by the introduction of a barrier cream.

From the unprotected applicator sticks an average of 41.66 micrograms of malachite green was diffused into the solution. By comparing the malachite green concentration diffused from each one of the barrier creams with the value of the control (taken as 100 percent), a value may be obtained which will show the relative barrier efficiency of each cream.

In comparing the cosmetic properties of Silicone Vanishing Creams No.'s 3 to 11, it is found that the creamier, more pleasing preparations are those which do not contain sodium lauryl sulfate. This fact, along with the sensitizing property of sodium lauryl sulfate, indicates that this emulsifier should not be included along with the potassium stearate (formed by chemical reaction of the potassium hydroxide and stearic acid). Another interesting observation is that although cetyl alcohol is reported to stabilize vanishing creams,[13] the one silicone vanishing cream in this series which does not contain cetyl alcohol is the best barrier cream. This may be due to the ability of the alcohol to reduce interfacial tension.

Since the proposed barrier cream would act both by filling the pores and by forming a protective film, both the *in vitro* (for the protective film) and *in vivo* (for pore-filling properties) tests are necessary in the evaluation of these products.

According to *in vitro* data Silicone Vanishing Cream No. 1 rates high in protective value; however, by *in vivo* tests, it ranks poorly. Silicone

TABLE II. RANK ORDER OF SILICONE VANISHING CREAMS AND OTHER BARRIER PRODUCTS AS SHOWN BY IN VITRO AND IN VIVO PROCEDURES.

In vitro		In vivo		
Barrier Product	Av. Concentration Malachite Green mcg. per 25 ml.	Barrier Product	Av. Penetration time in seconds	Av. Color Intensity of Reaction
Wool Fat	0	Sil. Van. Cr. No. 9	15	+
White Petrolatum	0	Wool Fat	12	+
Pro-Derma®	0	Silicote	9	+
Silicote®	0.33	White Petrolatum	3	+
Sil. Van. Cr. No. 9	1.33	Sil. Gibson Base	9	++
Sil. Van. Cr. No. 1	1.33	Sil. Van. Cr. No. 8	8	++
Sil. Van. Cr. No. 2	1.33	Covicone®	6	++
Covicone®	2.0	Sil. Van. Cr. No. 11	5	++
Sil. Van. Cr. No. 8	2.33	Pro-Derma®	4	++
Sil. Van. Cr. No. 11	5.0	Sil. Van. Cr. No. 10	3	++
Sil. Van. Cr. No. 6	6.33	Sil. Van. Cr. No. 7	3	++
Sil. Van. Cr. No. 7	6.33	On Hand®	2	++
Sil. Gibson Base	6.67	Sil Van. Cr. No. 2	4	+++
Sil. Van. Cr. No. 10	6.67	Sil. Van. Cr. No. 4	3	+++
Sil. Van. Cr. No. 5	7.67	Sil. Van. Cr. No. 1	3	+++
Sil. Van. Cr. No. 4	9.33	Sil Van Cr. No. 5	3	+++
On Hand®	14.67	Sil. Van. Cr. No. 6	4	++++
Unprotected Applicator stick	41.66	No Medication	0	Very Dark

Vanishing Cream No. 9 rates high when evaluated by the *in vitro* method and heads the list of barrier products when it is tested by the *in vivo* method. It has good pharmaceutic properties and is the silicone vanishing cream of choice. Silicone Vanishing Cream No. 9, for which the authors have proposed the name "Vansil", has shown good results in clinical trial.[14] More clinical data should be added to the laboratory data before final comparison of Vansil with non-vanishing cream barriers can be made.

The formula for Vansil follows:

	% by wt.
Stearic Acid (Pearlstearic)	10.0
Synthetic Japan Wax	2.0
DC 200, 1000 cts.	20.0
Potassium Hydroxide	0.5
Methylparaben	0.025
Propylparaben	0.015
Distilled Water	67.5
	100.0

Mix in the customary manner.

Summary

An *in vitro* and an *in vivo* method of evaluating barrier creams have been devised.

Twelve silicone creams have been formulated and compared with six controls (three commercial silicone ointments, one commercial silicone lotion, white petrolatum and wool fat).

Of the various protectants considered, "Vansil" tested the highest by the *in vivo* method and rated fifth when tested by the *in vitro* procedure.

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A METHOD FOR PHARMACY SERVICE AFTER HOURS

by EDWARD F. CROUMEY

A SPECIAL EMERGENCY DRUG UNIT for issuance of pharmaceutical supplies when the regular pharmacy staff is off duty has been found most useful. This emergency drug unit is in use at The Mary Fletcher Hospital, a teaching institution of the University of Vermont Medical School.

Emergency Drug Cabinet

The emergency drug cabinet consists of a special locked unit having two-way access both from the corridor and from the pharmacy (for refilling depleted items). This permits supervising nurses to procure drugs without entering the pharmacy after hours. The entire unit is located in one wall of the pharmacy and is approximately seven feet high by four and a half feet wide.

Intravenous fluids and drugs are indexed on a special listing for the night supervisor and the index is located on one of the locked doors opening to the outside corridor. Code locations such as "R" for refrigerator locations and "N" for narcotics are used. A small "Servel-type" refrigerator is contained in the unit to safeguard perishable drugs. One shelf of the unit contains antibiotics most frequently requested when the pharmacy is closed.

Advantages

For institutions whose after-hour pharmaceutical needs are supplied by a supervisor of nursing service with the key to the pharmacy, The Mary Fletcher Hospital device has the advantage of closer control of drugs by non-pharmacy personnel. Entrance to the pharmacy is not necessary to fill late orders. The unit also prevents unauthorized attempts at compounding by nurses. Drugs in the emergency cabinet can be replenished without pharmacy personnel leaving the work area.

In practice The Mary Fletcher Hospital unit is utilized by nursing office personnel after hours on an average of twenty times nightly which attests to its usefulness. Pharmacy personnel are not called for "run-of-the-mill" late night orders.

Drugs Stocked

Although the needs of each hospital will undoubtedly vary somewhat, we have found the list of drugs as shown in Table I to be adequate to fill most of our needs. Of course, the list is revised from time to time as new drugs are accepted and older ones become obsolete. While the list of drugs we employ may be used as a guide to those hospital pharmacists who wish to establish a similar method for handling calls after hours, we recommend that each hospital prepare its own list based upon its individual requirements. This should be done by the pharmacist in consultation with the medical and nursing staffs.

EDWARD F. CROUMEY is Chief Pharmacist at The Mary Fletcher Hospital, Burlington, Vt.

TABLE I. Pharmacy Night Supply Cupboard

Ace Bandage, 2", 3", 4" width
Achromycin, see Tetracycline
A.C.T.H. Solution, see Corticotropin Solution
A.P.C. with Codeine Tablets (N)
Acthargel H.P., see Corticotropin, Repository
Adrenal Cortex Extract Injection 10 ml. vial (R)
Aerosporin, see Polymyxin B Sulfate
Albumin, Normal Human, 25 Gm. vial (R)
Alcohol, Ethyl, Intravenous Injection 2 ml. ampul and 50 ml. vial
Alevaire, 500 ml. bottle
Alidase, see Hyaluronidase
Amigen, see Protein Hydrolysate Injection
Aminophylline Injection 0.5 Gm. ampul
Aminophylline Suppositories 0.5 Gm. (R)
Amphetamine (Benzedrine) Sulfate Injection 10 mg. ampul
Amyl Nitrite for Inhalation 0.3 ml. ampul
Amytal Sodium Injection 0.5 Gm. ampul
Anectine, see Succinylcholine Chloride Injection
Apomorphine Hydrochloride Hypodermic Tablets 6 mg. (N)
Apresoline Injection 20 mg. per ml. ampul
Apresoline Tablets 25 mg.
Ascorbic Acid Injection 100 mg. and 500 mg. ampuls
Aureomycin Hydrochloride Capsules 50 mg. and 250 mg.
Aureomycin Hydrochloride Injection (I.V.) 250 mg. and 500 mg. vials
Aureomycin Calcium Oral Drops 100 mg. per ml.
Aureomycin Hydrochloride Ophthalmic and Otic Solutions
Aureomycin Hydrochloride Surgical Powder 5 Gm.
Aureomycin Hydrochloride Tablets (Soluble) 50 mg.
Auralgan Otic Solution 15 ml. bottle
Bacitracin Sterile, 50,000 Units per vial
BAL in Oil 10%, 4.5 ml. ampul
Banthine Tablets 50 mg.
Benadryl Hydrochloride Injection 10 mg. per ml.; 10 ml. vial
Bistrium, see Hexamethonium Bromide Injection
Brandy (N)
Caffeine Sodium Benzoate Injection 0.5 Gm. ampul
Cafergot Tablets
Calcium Chloride Injection 10% ampul
Calcium Gluconate Injection 10% ampul
Calcium Thiosulfate Injection 5 ml. ampul
Cer-O-Cillin (Penicillin O) 200,000 Units and 500,000 Units vials
Chloromycetin Capsules 250 mg.
Chloromycetin Injection (I.M. and I.V.) 500 mg.
Chloromycetin Palmitate Suspension 125 mg. per 4 ml.
Codeine Injection 30 mg. per ml. (N)
Codeine Tablets 30 mg. (N)
Corticotropin, Repository, Gel 40 Units per ml.; 5 ml. vial
Corticotropin Aqueous Injection 40 Units per ml.; 5 ml. vial (R)
Cortisone Acetate Injection 50 mg. per ml.; 10 ml. vial
Cortisone Acetate Tablets 25 mg.
Decholin, see Sodium Dehydrocholate
DHE 45, see Dihydroergotamine Injection
Demerol, see Meperidine Hydrochloride Injection
Depo-Heparin Injection 200 mg. syringe
Depropanex 10 ml. vial (R)
Desoxycorticosterone Acetate Injection 5 mg. per ml.; 10 ml. vial
Dextrose Injection 50%, 50 ml. vial
Dicumarol Tablets 25 mg., 50 mg. and 100 mg.
Diethylstilbestrol Tablets 25 mg.
Digiglusin Injection 1 U.S.P. ampul
Digitoxin Injection 0.2 mg. per ml.; 2 ml. ampul

Digoxin (Digitalis Lanata) Injection 0.25 mg. per ml., 1 ml. ampul
Digoxin (Digitalis Lanata) Injection 0.5 mg. per ml.; 1 ml. ampul
Dihydroergotamine Injection 1 mg. per ml.; 1 ml. ampul
Dilantin Sodium Capsules 30 mg. and 100 mg.
Dilaudid Hydrochloride Hypodermic Tablets 4 mg. (N)
Dolophine, see Methadon Hydrochloride
Dramamine Tablets 50 mg.
Dromoran Hydrobromide Injection 5 mg. ampul (N)
Ephedrine Sulfate Injection 50 mg. ampul
Epinephrine (Adrenalin) Solution 1:1000 ampul
Epinephrine for Inhalation 1:100; 5 ml. vial (R)
Ergonovine Maleate Injection 0.2 mg. ampul
Ergonovine Maleate Tablets 0.2 mg.
Erythromycin Injection (I.V.) 250 mg., 300 mg., and 1000 mg. vials
Erythromycin Tablets 100 mg.
Etamon Chloride Injection 100 mg. per ml.; 20 ml. vial
Ethanol 95% for Inhalation, 500 ml. bottle
Floropryl Ophthalmic Solution 5 ml. bottle
Gantrisin Injection 2 Gm. and 4 Gm. ampuls
Gantrisin Tablets 0.5 Gm.
Gelfoam No. 12, jar
Gelfoam Powder, can
Gynergen Injection 1 mg. ampul
Gynergen Tablets 1 mg.
H.M.C. No. 2 Hypodermic Tablets (N)
Heparin Sodium Injection 10 mg. per ml.; 10 ml. vial
Hexamethonium Bromide Injection 25 mg. and 100 mg. per ml.; 10 ml. vials
Histamine Phosphate Injection 1:1000 ampul
Hyaluronidase Injection (R)
Hycodan Bitartrate Syrup (Leave Rx by M.D.) 60 ml. bottle (N)
Hycodan Bitartrate Tablets 5 mg. (N)
Hydrocortisone Acetate Injection 25 mg. per ml.; 5 ml. vial
Hydrocortisone Acetate Tablets 10 mg.
Hydrocortisone Alcohol Injection (I.V.) 100 mg. per 20 ml. ampul
Hykinone, see Menadione Sodium Bisulfite Injection
Immune Serum Globulin 2 ml. vial (R)
Insulin Injections (Regular, Protamine, N.P.H.) 40 Units per ml.; 10 ml. vials (R)
Intravenous Solutions (All routine formulas, dextrose, saline, invert sugar, etc.) all size flasks
Isuprel (Isonorin) for Inhalation 1:200; 10 ml. vial (R)
Koagamin vial
Kwell Ointment 60 Gm. jar
Levophed Bitartrate Injection 4 ml. vial
Lipo-Adrenal Cortex Injection 5 ml. vial (R)
Lobeline Sulfate Injection 3 mg. per ml.; 5 ml. vial
Lyo BC (Forte) vial
Magnesium Sulfate Injection 25%; 10 ml. ampul, and 50%; 2 ml. ampul
Mandelamine Tablets 0.25 Gm.
Mebaral Tablets 30 mg.
Menadione Sodium Bisulfite Injection 2.5 mg., 5 mg., 10 mg., and 72 mg. ampuls
Meperidine (Demerol) Hydrochloride Injection 50 mg. per ml. vial (N)
Meperidine (Demerol) Hydrochloride Tablets 50 mg. (N)
Mephenesin Injection 20 mg. per ml.; 50 ml. and 100 ml. vials
Mephenesin Tablets 0.5 Gm.
Mephyton (Emulsion Vitamin K_1) Injection 50 mg. per ml.; 1 ml. ampul
Mercury 5 ml. jar
Mercuhydrin Injection 1 ml. ampul
Methadone Hydrochloride Injection 10 mg. per ml. vial (N)
Methadone Hydrochloride Tablets 5 mg. (N)
Nalline Hydrochloride Injection 10 mg. ampul (N)
Neo-Synephrine Injection 1%; 5 ml. vial (R)
Nisentil Injection 60 mg. per ml.; 1 ml. ampul (N)
Nicotinic Acid Injection 100 mg. per ml.; 10 ml. vial
Oily Shake Lotion, 500 ml. bottle
Ophthalmic Solutions — All routine solutions, miotic and mydriatic, available in Durfee Eye Clinic
O-Tos-Mo-San 15 ml. bottle
Otobiotic 15 ml. bottle
Ouabain 0.5 mg. ampul
Pantopon Injection 20 mg. ampul (N)
Pantopon Tablets 10 mg. (N)
Papaverine Hydrochloride Injection 60 mg. ampul (N)
Papaverine Hydrochloride Tablets 30 mg. (N)
Paredrine-Sulfathiazole Suspension, 15 ml. bottle
Penicillin G, 1,000,000 Unit vial
Penicillin G Procaine, 600,000 Unit vial
Penicillin G Procaine, Fortified, 400,000 Unit vial
Penicillin G Aqueous Suspension 300,000 Unit vial
Percorten, see Desoxycorticosterone Acetate Injection
Pentobarbital Sodium Injection 0.25 Gm. ampul
Phenobarbital Sodium Injection 0.12 Gm. and 0.3 Gm. ampuls
Phospho Soda 180 ml. bottle
Picrotoxin Injection 3 mg. per ml.; 20 ml. vial
Pitocin Injection 10 Unit ampul
Pitressin Tannate in Oil Injection 5 Unit ampul
Pituitrin Injection 10 Unit ampul
Pituitrin Injection 10 Unit ampul
Polymyxin B Sulfate Injection 50 mg. vial
Polymyxin B Sulfate Otic Solution 10 ml. bottle
Potassium Chloride Injection 20 mEq. and 4 mEq. ampuls
Potassium Orthophosphate Buffer Solution 30 mEq. and 60 mEq. vials
Priscoline Injection 25 mg. per ml.
Progesterone Injection 50 mg. per ml.
Pronestyl Capsules 0.25 Gm.
Pronestyl Injection (Procainamide Hydrochloride) 100 mg. per ml.; 10 ml. vial
Pro-Banthine Injection 30 mg. ampul
Prostigmine Methylsulfate Injection 1:2000 and 1:4000; 1 ml. ampuls
Protamine Sulfate Injection 1%; 5 ml. ampul
Protein Hydrolysate Injection 500 ml. and 1000 ml. flasks
Pyridium Tablets 0.1 Gm.
Pyridoxine Hydrochloride Injection 100 mg. per ml.; 10 ml. vial
Quinidine Gluconate Injection 80 mg. per ml.; 10 ml. vial
Quinidine Sulfate Tablets 0.2 Gm.
Rutin Tablets 20 mg. and 60 mg.
Salyrgan Theophylline Injection 1 ml. ampul
Sodium Bicarbonate Injection 3.75 Gm. ampul
Sodium Dehydrocholate Injection 20%; 3 ml. vial
Sodium Sulfacetamide (Sulamyd) Ophthalmic Solution 15 ml.
Sorbital Injection 50%; 50 ml. ampul
Stilbestrol, see Diethylstilbestrol
Streptomycin (Sulfate, Dihydrostreptomycin Sulfate) 1 Gm. per 2 ml. vials
Succinylcholine Chloride Injection 20 mg. per ml., 10 ml. ampul; 50 mg. per ml.; 10 ml. vial (R)
Sulfadiazine Injection 2.5 Gm. vial
Sulfadiazine Tablets 0.5 Gm.
Sulfamerazine Tablets 0.5 Gm.
Sulfamylon with Streptomycin vial
Sulfasuxidine Tablets 0.5 Gm.
Sulfathalidine Tablets 0.5 Gm.
Sulfathiazole Injection 2.5 Gm. vial
Sulfathiazole Tablets 0.5 Gm.
Tensilon (Curare Antagonist) 10 mg. per ml.; 10 ml. vial
Terfonyl (Triple Sulfa) Tablets 0.5 Gm.
Teropterin ampul
Terramycin Hydrochloride Capsules 100 mg. and 250 mg.
Terramycin Hydrochloride Injection (I.M.) 100 mg. vial
Terramycin Hydrochloride Injection (I.V.) 250 mg. and 500 mg. vials
Testosterone in Oil Injection 25 mg. ampul
Tetanus Antitoxin, Prophylactic, 1500 Unit vial (R)
Tetanus Antitoxin, Therapeutic, 20,000 Unit vial (R)
Tetanus-Gas Gangrene, Prophylactic (R)
Tetanus Toxoid, multiple dose vial (R)
Tetracycline Hydrochloride Capsules 100 mg. and 250 mg.
Tetracycline Hydrochloride Injection (I.M.) 100 mg. vial
Tetracycline Hydrochloride Injection (I.V.) 250 mg. and 500 mg. vials
Tetracycline Oral Drops 100 mg. per ml.
Theelin (Estrogenic Substance) Injection 1 mg., 2 mg., and 5 mg. ampuls
Thiamine Hydrochloride Injection 100 mg. per ml.; 10 ml. vial
Thiomerin Injection 2 ml. vial
Thrombin 1000 Unit vial (R)
Thromboplastin, local hypodermic, vial (R)
Tolserol, see Mephenesin
Tridione Capsules 0.3 Gm.
Tridione Injection 1 Gm. ampul
Triple Sulfa Suspension 0.5 Gm. per 4 ml.; 120 ml. bottle
Tryptar, Topical, 250 mg. vial (R)
Tryptar, Aerosol, 125 mg. vial (R)
Tuosul (Two sulfa) Tablets 0.5 Gm.
Thorazine Injection 25 mg. per ml.; 2 ml. vial
Thorazine Tablets 10 mg. and 25 mg.
Urecholine Chloride Injection 5 mg. ampul
Urecholine Tablets 5 mg.
Varidase (Streptokinase-Streptodornase) 125,000 Units-25,000 Units vial (R)

(R) Stored in night cupboard refrigerator
(N) Stored in night cupboard narcotic drawer

YOUR ROLE ON THE MEMBERSHIP COMMITTEE

Dear Member:

This year is rapidly slipping by, and with each waning month before the Annual Meeting in April, more effort is needed to reach the goal of *600 new members* this year. At the last count (on December 20, 1955) we have accepted only 262 new members since last May. The total membership now stands at 2,373 members. With an estimated 4,600 hospital pharmacists in this country, you can see that we have only reached the half-way point in our ultimate goal of having every hospital pharmacist in the country affiliated with the American Pharmaceutical Association and the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS.

If one stops for a moment to consider the strides that hospital pharmacy has made in the past twelve years since the ASHP was founded, it is easy to see that hospital pharmacy in this country has progressed as the SOCIETY has grown. Hospital pharmacy has grown from a "drug-room custodian" type of operation into a well recognized branch of the profession—one which we like to feel offers more opportunity for the truly professional practice of pharmacy. Projecting this growth into the future, picture what advances could be made in our specialty if 100 percent of the hospital pharmacists were active, participating members of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS!

President Busick has appointed an excellent Membership Committee this year, with members in almost every state to recruit new members for the ASHP. This Committee is doing a splendid job, but the best that can be hoped for from this small group is that several hundred new members will be signed up before next April. In order to enlist the help of all the members of the ASHP, I would like to take the following step:

For the remainder of the fiscal year I would like for each of you to consider yourself a member *ex-officio* of the Membership Committee, with just one assignment between now and April 1. That assignment is to contact just *one* prospective member and show that person why he or she should join the ASHP. Being a member yourself, I am sure that you will have no trouble in discussing the advantages of membership. Show a copy of THE BULLETIN and point out the type of articles printed there which will give any hospital pharmacist help in providing better pharmaceutical service. Point out that many administrators of hospitals prefer to hire pharmacists who belong to their professional organizations, thereby indicating a desire to uphold the standards of the profession. Tell him how belonging to the ASHP has helped *you* to be a better hospital pharmacist; has helped you obtain your present position; or how the ASHP is always striving to raise the standards of hospital pharmacy (and with higher standards naturally follows higher remuneration.) These are but a few of the points that you might emphasize.

Will you accept this appointment and assignment? We need your help. If each member will contact just one member in this manner, I predict that the results will be staggering, and we will have a rise in membership nothing short of phenomenal by the time of our Annual Meeting. Let us each make a New Year's Resolution—to contact just one prospective member for the A.Ph.A. and the ASHP in the next month. Since only 50 percent of the hospital pharmacists in the country are ASHP members, there is one non-member for each of us to contact. Your local chapter of the ASHP will be glad to help you locate these non-members in your area. Do not put it off; find your prospect and call on him now. Remember that only through unity comes strength, so let us all work toward that 100 percent figure in membership. Let us make 1955-56 a really memorable year in the history of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS.

Cordially yours.
JAMES D. MCKINLEY, JR., *Chairman*
Committee on Membership and Organization

DETROIT

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ANNUAL MEETING . . . APRIL 8-13

American Society of Hospital Pharmacists

American Pharmaceutical Association

DETROIT, KNOWN AS THE "MOTOR CITY" of the United States, will be host to the 1955 Convention of the American Pharmaceutical Association. During the week of April 8, members of the A.Ph.A. and affiliated organizations will meet at the Hotel Statler. The AMERICAN SOCIETY OF HOSPITAL PHARMACISTS will convene on Sunday, Monday, and Tuesday for its fourteenth Annual Meeting. Of historical significance is the fact that it was in Detroit in 1941 that first plans for organization of the SOCIETY were made. Too, it was in this area that the first Chairman of the ASHP, Mr. H.A.K. Whitney, practiced.

Local Plans

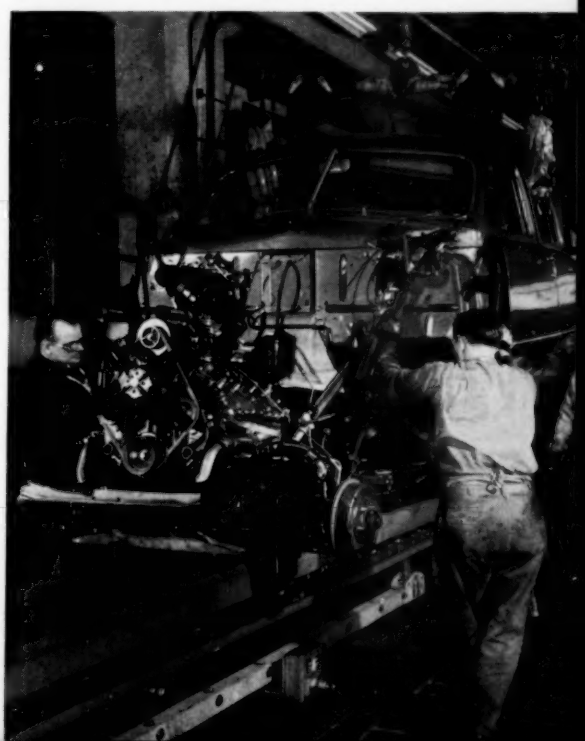
This year, the Michigan Society of Hospital Pharmacists, one of the SOCIETY's largest affiliates, will play an active part in the local arrangements. The local Hospital Pharmacists' Committee, headed by Mr. Donald Melcher, Oakwood Hospital, Dearborn, has been formulating plans for providing hospital pharmacists a profitable and entertaining week in Detroit. A schedule of special events will be sent to all members of the SOCIETY along with detailed information regarding the program.

Of particular interest will be the 1956 H.A.K. Whitney Award Dinner which is held annually by the Michigan Society and is scheduled this year in conjunction with the Detroit Meeting. For the first time, leaders in the ASHP and delegates from the affiliated chapters will have an opportunity to participate in this event which has become of national interest. The Award, given annually to an individual who has made significant contributions to the practice of hospital pharmacy, will be presented to Dr. George F. Archambault, Immediate Past President of the SOCIETY.

Other special events being scheduled by the Michigan Society include a Sunday Afternoon Tea in the SOCIETY Suite at the Headquarters Hotel and tours of pharmacy departments in some of the leading hospitals in the Detroit Area. Hospital pharmacists will be able to register for tours at the time of the Convention. Among the hospitals to be visited are St. Johns', William Beaumont, Children's, Harper, Mt. Sinai, and Oakwood. Mrs. Virginia Cross, Chief Pharmacist at Children's Hospital in Detroit, will be in charge of arrangements for the tours.

In addition to the Chairman, Mr. Melcher, and Mrs. Cross who is also in charge of publicity, the Hospital Pharmacists' Committee includes the following: George Phillips, University Hospital, Ann Arbor; Jane Rogan, Deaconess Hospital, Detroit; Adam Stark, St. Joseph Hospital, Pontiac; and Harold Tayler, Womans Hospital, Detroit. Also assisting will be Duane Pavey, a representative of Schering Corporation, who will be in charge of the Welcoming Committee for ASHP Members, and Helen Rutkowski who will be in charge of the Sunday Reception. Mr. Ray McClarty is Chairman of the Whitney Award Committee.

Detroit means automobiles. Several plants offer scheduled tours of assembly operations.



Downtown Detroit, with the Detroit River and Canada at the top. Meetings will be held at the Statler Hotel, shown on the right of the semi-circular park in foreground.

ÓLSEN

Detroit's new City-County building.

ENRY FORD MUSEUM

Greenfield Village is now the World's greatest collection of Americana. This is a restoration of the laboratory in which Edison invented the electric light.

The Ambassador Bridge links Detroit (left) and Windsor, Canada.

DETROIT EDISON

Papers to be Presented

Papers by leaders in hospital pharmacy and related fields will be presented during the sessions on Monday and Tuesday. The SOCIETY's Committee on Program and Public Relations, headed by Mr. Leo Godley, has announced the following for presentation at the Annual Meeting.

"Recording and Reporting Drug Reactions," by Irvin Kerlan, M.D., Chief of the Research and Reference Branch, Division of Medicine, Food and Drug Administration, Department of Health, Education and Welfare, Washington, D. C.

"Appreciation of Administrative Procedures in Hospitals," by M. R. Kneifl, Executive Secretary, Catholic Hospital Association, St. Louis, Mo.

"The A.H.A. and Its Interest in Hospital Pharmacy," by Sarah H. Hardwicke, M.D., Secretary, Council on Professional Practice, American Hospital Association, Chicago, Ill.

"An Emergency Drug Room for Handling After Hour Requests," by Richard G. Henry, Chief Pharmacist, Madison General Hospital, Madison, Wis.

"Development of a Germicidal Soap Containing Bithionol," by S. H. Hopper, Professor and Chairman, Department of Public Health, and K. M. Wood, Manufacturing Pharmacist, both from Indiana University Medical Center, Indianapolis, Ind.

"A Description and Personal Evaluation of a Course in Radioisotopes, for Hospital Pharmacists," by Evlyn Gray Scott, Chief of Pharmacy Service, St. Luke's Hospital, Cleveland, Ohio.

"A Report on the Development of the Society's Committee on Pharmacy and Pharmaceuticals," by William Heller, Chief of Pharmacy Service, University of Arkansas Hospital, Little Rock, Ark.

"A Study of Parenteral Solutions Made by Hospital Pharmacists," by Irene Olynyk, P. F. Belcastro, and G. J. Sperandio, Purdue University School of Pharmacy, Lafayette, Ind.

"The Development and Evolution of Hospital Formularies," by Alex Berman, Acting Secretary, American Institute of the History of Pharmacy, Madison, Wis.

"A Sixteen Point Program for Promoting Professional and Public Relations by Hospital Pharmacists," by Robert A. Walsh, Professorial Lecturer, Massachusetts College of Pharmacy, Boston, Mass. and William E. Hassan, Chief Pharmacist, Peter Bent Brigham Hospital, Boston, Mass.

"Labeling Responsibilities of the Pharmacist," by James W. Mitchener, Chief Pharmacist, Cabarrus Memorial Hospital, Concord, N. C.

"The New System for Evaluation of Drugs by the Council on Pharmacy and Chemistry," by Dr. H. D. Kautz, Secretary, Council on Pharmacy and Chemistry, American Medical Association, Chicago, Ill.

Panel Discussion: "Introducing and Interviewing Graduate Students and New Graduates in Hospital Pharmacy." Participants to be announced.

"The Function of The Formulary and Therapeutic Guide of the Toledo Academy of Medicine," (Abst.) by Henry Z. Sempowski, Pharmacist, Mercy Hospital, Toledo, Ohio.

"The Effects of Vitamins and Other Drugs on the Blood Pressure of Laboratory Animals," (Abst.) by Sheldon J. Schwartz, and Earl P. Collins, both at Freedmans Hospital, Washington, D. C.; and Phillip V. Hammond, College of Pharmacy, Howard University, Washington, D. C.

Business Sessions

In addition to the presentation of papers and entertainment, the business of the SOCIETY will be transacted during the three day session. The House of Delegates which includes representatives of the affiliated chapters, the members of the Executive Committee and the Chairmen of the Special Committees, will meet on Sunday afternoon at 2 P.M. The Address of the President-Elect, Mr. Paul Parker, will be presented at that time followed by an open discussion relating to SOCIETY affairs. The Reports of Officers and Committee Chairmen will be presented at the Monday Morning Session and additional business will be covered throughout the two-day meeting. The Executive Committee will meet on the Saturday prior to the Annual Meeting and matters which should be called to the attention of this group should be in the hands of the Secretary before April 1.

Reports and recommendations to be presented by the Officers and Committee Chairmen will cover the work carried out by the SOCIETY during the past year. Of particular interest will be the Executive Committee's action regarding the Formulary Service and establishment of the Committee on Pharmacy and Pharmaceuticals. Dr. William Heller, as Chairman of the Committee, will report to the SOCIETY on progress to date.

Also, Mr. Arthur Dodds, Chairman of a Special Committee to study the narcotic regulations will present a revision of the interpretations worked out by the Committee and the Bureau of Narcotics a few years ago. This study, carried out over a period of years by the SOCIETY's Committee, will clarify some of the problems concerned with handling narcotics in hospitals. It is anticipated that the full report will be published and made available to hospitals throughout the country.

The Committee on Economic Poisons has accumulated material of interest on accidents from household chemicals, medications and pesticides. Tentative plans are being made to have an exhibit based on authentic fatal accidents of this type.

It is anticipated that all committee reports will be available in mimeographed form and will be published in full in the July-August issue of THE BULLETIN.

A.Ph.A. Sessions

Hospital pharmacists will also participate in the A.Ph.A. meetings throughout the week. The General Sessions, the meetings of the House of Delegates, and the various Sections will meet on Wednesday, Thursday, and Friday.

Other sections being held during the week include the Scientific Section, the Section on Education and Legislation, the Section on Pharmaceutical Economics, and the Section on Historical Pharmacy. Further details regarding the program will appear in the Practical Pharmacy Edition of the *Journal of the American Pharmaceutical Association.*

Hotel reservations may be made through the Convention Housing Bureau. All members will receive a form listing complete information as to cost and hotel location.

Entertainment in Detroit

Detroit offers much in the line of entertainment for those attending the Convention. As pointed out by the Convention and Tourist Bureau in Detroit, you can watch your favorite car being built on the assembly line, take a 10-minute walk or a fifteen cent bus ride to foreign soil, visit world-famous museums and playgrounds and see some of the giant industrial plants of the nation producing steel, heavy chemicals, business machines, drugs and other health and industrial products. Nearby also, is the famous Greenfield Village founded by Henry Ford. There are fine shops, excellent restaurants and nightclubs and other attractions both for those loving the outdoors or those who are more interested in indoor sightseeing.

New Clinic building addition towers up from center of Henry Ford Hospital.

Affiliated Chapters and the House of Delegates

by WALTER M. FRAZIER

THE FOUNDERS OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS were aware of the desirability of strong affiliated chapters and the need for a high percentage of active participating members. Although the early leaders of the SOCIETY did much to encourage and solicit active participation by individual members and chapters, it was not until 1949 when the ASHP House of Delegates was established, that formal representation became a reality.

The By-Laws stipulate that each affiliated chapter with 50 or fewer active members is entitled to one voting delegate. Each affiliated chapter with more than 50 active members is entitled to one voting delegate for each additional 50 active members. The members of the Executive Committee and the Chairmen of Special Committees are also entitled to vote. Fraternal delegates are formally invited to attend meetings and may be granted the privilege of the floor. All hospital pharmacists are invited to attend the meetings unless otherwise specified.

A review of the minutes of the House of Delegates reveals that the objectives, as stated in the By-Laws, have been pursued. The delegates have been present in steadily increasing numbers. Reports of the Chapters have been presented. The order of business and the planned agenda have been followed. Beginning in 1952, the president-elect has presented an address, outlining the plans for the coming year. Several changes in the Constitution have been discussed and agreed upon. The House approved, after deliberating, on a proposed increase in the dues of the SOCIETY. Several controversial issues have been presented and debated. This preliminary meeting has served as a means of getting acquainted and oriented for the busy convention week ahead. The increased attendance, better interest, and the usefulness of this session seems to indicate that no change is required.

It is evident, however, that planning for the opportunities of this important representation has not been fully utilized by the Chapters. Specific instruction of the delegates by the local, state, or regional affiliate is not only a responsibility—it is an opportunity to contribute ideas and to perform an organizational service to the SOCIETY. It appears that there would be an advantage in better sponsorship of the delegate by each Chapter. The delegate should, of course, be chosen because he has superior qualifications to represent the Chapter and he should be one who is familiar with the activities and opinions of the local, state, or regional area. The affiliated group should devote sufficient time, prior to the convention to the proper choice of the delegate and sufficient time for a discussion of the subjects which are pertinent to the instruction of the delegate. In other words, the combined opinion of the affiliated group should be crystallized well in advance of the national meeting. There is merit in the custom of some of the chapters in providing at least a portion of the expenses of the delegate for attending the national meetings. In this way the Chapter has an interest in the delegate. He would be responsible for carrying out the instructions and he would be obligated to report to the Chapter on the A.Ph.A. convention and the ASHP meetings. Adequate representation in the national organization is advantageous for several reasons: 1. it provides for realistic group decisions; 2. it should also assure an equitable distribution of appointments and elected offices, and 3. it should serve as the best means of finding and progressively developing the future leaders of the SOCIETY.

Delegates who fulfill their assignment gain knowledge and experience in national activity and would be more apt to become candidates for national committee appointment. The Chapters have occasionally been disposed to suggest a member for national activity when a qualified member has served well in an affiliated group. Sometime in the future, it may be advisable to consider some plan whereby one or two members of the ASHP Executive Committee would be elected by the membership after the nominees are chosen by the House of Delegates. Also a precedent might be established that attendance at one or two meetings as a delegate should be a prerequisite to nomination for national office or appointment to the chairmanship of a national committee.

The ASHP has been fortunate so far to have enough people who are qualified and willing to perform the organizational work of the SOCIETY. Elected and appointed positions have shown a very fair distribution of the honors and effective utilization of talent. However, there are not enough

WALTER M. FRAZIER, Chief Pharmacist at Springfield City Hospital, Springfield, Ohio, is a Past-President and a Past-Secretary of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS.

Presented at the Meeting of the House of Delegates, Miami Beach, Fla., April 30, 1955.

new people who are actually familiar with the organizational function to replace the ones who have been giving so much time and energy to the work.

The ideas, the interest, and the projects undertaken by the Executive Committee should more often emanate from the Chapters. The Chapters should be strong enough to initiate progress and contribute ideas which have been successfully tried in the local, state and regional areas. The Chapters should not so frequently be willing to wait for stimulation and ideas from the parent organization.

Important progress has been made thus far by the ASHP in the advancement of Hospital Pharmacy because of the combined effort of the Chapters and the membership. It is the opportunity and responsibility of the Chapters to assure the continuation of this progress by improved participation. The opportunity for representation has been provided—the Chapters should use it fully.

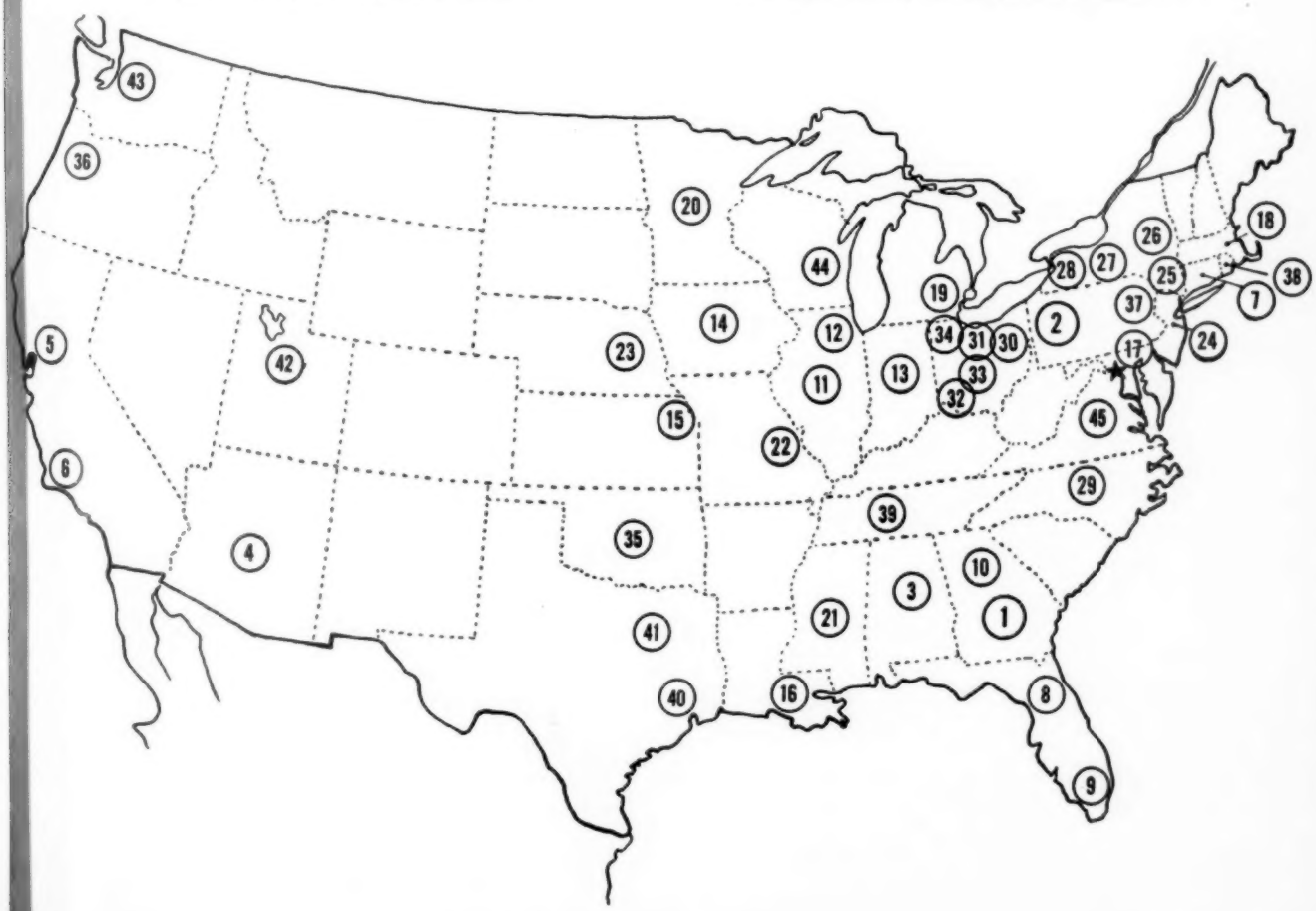
Affiliated Chapters and Officers

REGIONAL CHAPTERS

1. Southeastern Society of Hospital Pharmacists
2. Western Pennsylvania Society of Hospital Pharmacists (Pittsburgh)

STATE AND LOCAL CHAPTERS

3. Society of Alabama Hospital Pharmacists
4. Arizona Society of Hospital Pharmacists
5. Northern California Society of Hospital Pharmacists
6. Southern California Society of Hospital Pharmacists
7. Connecticut Society of Hospital Pharmacists
8. Florida Society of Hospital Pharmacists
9. Southeastern Florida Society of Hospital Pharmacists
10. Georgia Society of Hospital Pharmacists
11. The Illinois Chapter of the American Society of Hospital Pharmacists
12. Midwest Association of Sister Pharmacists (Chicago)
13. Indiana Society of Hospital Pharmacists
14. Iowa Society of Hospital Pharmacists
15. Society of Hospital Pharmacists of Greater Kansas City
16. Louisiana Society of Hospital Pharmacists
17. Maryland Association of Hospital Pharmacists
18. Massachusetts Society of Hospital Pharmacists
19. Michigan Society of Hospital Pharmacists
20. Minnesota Society of Hospital Pharmacists
21. Mississippi Society of Hospital Pharmacists
22. Hospital Pharmacists' Association of Greater St. Louis
23. Nebraska Society of Hospital Pharmacists
24. New Jersey Society of Hospital Pharmacists
25. Greater New York Chapter of the American Society of Hospital Pharmacists
26. Northeastern New York Society of Hospital Pharmacists
27. Society of Hospital Pharmacists of the Rochester Area
28. Western New York Chapter of the American Society of Hospital Pharmacists
29. North Carolina Society of Hospital Pharmacists
30. Akron Area Society of Hospital Pharmacists
31. Cleveland Society of Hospital Pharmacists
32. Greater Cincinnati Society of Hospital Pharmacists
33. Ohio Society of Hospital Pharmacists
34. Toledo Society of Hospital Pharmacists
35. Oklahoma Society of Hospital Pharmacists
36. Society of Hospital Pharmacists of the State of Oregon
37. Philadelphia Hospital Pharmacists' Association
38. Rhode Island Society of Hospital Pharmacists
39. Tennessee Society of Hospital Pharmacists
40. Houston Area Society of Hospital Pharmacists
41. Texas Society of Hospital Pharmacists
42. Utah Society of Hospital Pharmacists
43. Washington State Hospital Pharmacists
44. Wisconsin Society of Hospital Pharmacists
45. Virginia Society of Hospital Pharmacists



North American Associate Members

The International Pharmaceutical Federation

The following American pharmacists and organizations are Associate Members of the International Pharmaceutical Federation. This list includes those whose membership extends through 1955. Extensions of membership beyond 1955 are denoted by one or two asterisks.

Associate membership in the Fédération Internationale Pharmaceutique is open to all American pharmacists who are members of their national professional organizations. Associate Members receive the Bulletin of the Federation which contains many of the papers presented at the Federation meetings as well as other articles concerning various phases of pharmacy throughout the world.

Those pharmacists who wish to join the Fédération Internationale Pharmaceutique may do so by submitting their name, title and address, together with a check for $2.75.

DON E. FRANCKE
American Representative F.I.P.
University Hospital
Ann Arbor, Mich.

United States

Adams, Carsbie C., Atlanta, Ga.
Alekna, Emily A., Altadena, Calif.
American Institute of the History of Pharmacy, Madison 6, Wis.
American Society of Hospital Pharmacists, Washington 7, D. C.
Archambault, George F., Bethesda 14, Md.
*Arizona Society of Hospital Pharmacists, Phoenix, Ariz.
Banning, Jennie M., Saginaw, Mich.
Bavly, Ben, New Orleans 16, La.
Beard, Henry W., Portland 5, Ore.
*Beaty, Mary Bak, New York 17, N. Y.
Beck, Allen V. R., Indianapolis, Ind.
Bender, George A., Detroit 32, Mich.
*Berger, Calvin, New York, N. Y.
Berman, Alex, Madison 6, Wis.
Blythe, Rudolph H., Philadelphia 1, Pa.
Bonow, Eunice R., Milwaukee 3, Wis.
Bowles, Grover C., Memphis 3, Tenn.
*Branson, Joanne, Ann Arbor, Mich.
Brochmann-Hanssen, E., San Francisco 22, Calif.
Brodie, Donald, San Francisco 22, Calif.
Bunce, Allen H., Atlanta 3, Ga.
Bundt, Charles R., Toledo, Ohio
Burlage, Henry M., Austin 5, Tex.
*Busick, Claude, Stockton, Calif.
Canaipi, Victor V., Providence, R. I.
Carlin, Evelyn M., Paterson 4, N. J.
Cataline, Elmon L., Albuquerque, N. Mex.
Claus, Jacqueline, Houston, Tex.
Coburn, Thelma Morris, Birmingham, Ala.
Coghill, Mrs. Robert D., Lake Bluff, Ill.
Cole, Paul F., Skokie, Ill.
Collier, Halcyone B., St. Petersburg, Fla.
Colunga, Hilda, New York 23, N. Y.
*Committee on Hospital Pharmacy Practice, Catholic Hospital Association, St. Louis 4, Mo.
Conti, Marie, Long Island, N. Y.
Cook, E. Fullerton, Swarthmore, Pa.
Cooper, Jack, Summit, N. J.
Costello, P. H., Chicago 5, Ill.
Creighton University College of Pharmacy, Omaha, Nebr.
Crotwell, Johnnie, Atlanta, Ga.
Daiell, H. L., Milwaukee 1, Wis.
Dellande, Armand J., St. Louis 9, Mo.
deNavarre, M. G., Detroit 2, Mich.

Deno, Richard A., Ann Arbor, Mich.
Dental Pharmacy Library, Temple University, Philadelphia 40, Pa.
Dunning, H. A. B., Baltimore, Md.
*Falzine, Esther L., Cleveland 2, Ohio
Fiege, Robert W., Indianapolis, Ind.
Fischl, Louis J., Oakland, Calif.
*Flack, Herbert L., Philadelphia 7, Pa.
*Fletcher, Gilbert W., Ann Arbor, Mich.
Fontanet, Josephine, Miami Beach, Fla.
*Foster, Thomas A., Washington 25, D. C.
Fox, Sereck H., Detroit, Mich.
*Francke, Don E., Ann Arbor, Mich.
Franzoni, F. Royce, Arlington 7, Va.
*Frazier, Walter M., Springfield, Ohio
Frey, L. L., Washington 9, D. C.
Gdalman, Louis, Chicago 5, Ill.
Geiger, E. Burns, Brooklyn 6, N. Y.
*Gibson, Arthur J., Ann Arbor, Mich.
Goldman, Goldie, Brooklyn 19, N. Y.
Gooch, John M., Washington 8, D. C.
Gotthelf, Irma, New York 21, N. Y.
Green, Melvin W., Chicago 5, Ill.
Griffenhagen, George, Washington 25, D. C.
Hackett, Joseph P., New York 13, N. Y.
Halpern, Alfred, New York 13, N. Y.
Heinz, Jack, Salt Lake City 2, Utah
Heller, William M., Little Rock, Ark.
Herholdt, Fred D., Dover, Del.
Heyer, Ursula E., Wauwatosa 13, Wis.
Holland, Madeline Oxford, Meadowbrook, Pa.
Hubble, Else Carr, Centralia, Wash.
Inashima, Osamu James, Boston 8, Mass.
Jacobs, Sadie, Long Island, New York
*Jacobson, Raphael, Chicago 39, Ill.
Jeffers, Cedric M., Temple, Texas
Jenkins, Glenn L., Lafayette, Ind.
*Jones, Hurd M., Jr., Houston 4, Tex.
Ketcham, Basil P., Philadelphia 43, Pa.
Klein, Karl F., Aberdeen, S. Dak.
Kuck, Marie Bukovsky, San Francisco 12, Calif.
Kunkel, Frank E., Cincinnati 27, Ohio
Lantos, Robert L., Galveston, Tex.
Larwood, Charles H., Toledo, Ohio
Lawson, Robert E., Denver, Colo.
*Levin, Sam D., Minneapolis 11, Minn.
Lille, Henri H., Pasadena 1, Calif.
Litman, Abe, Pittsburgh 6, Pa.
*Little, Ernest, Newark 4, N. J.
Lukaszewicz, John J., Buffalo 11, N. Y.
MacCartney, John A., Detroit 32, Mich.
Maicki, Henry J., Detroit, Mich.
Markuse, Abraham L., Arlington 6, Va.
McDonnell, John M., Bloomfield, N. J.
*Meredith, Donald T., Kalamazoo, Mich.
*Meriano, Constantine N., Boston 8, Mass.
Miale, Joseph P., Mount Vernon, N. Y.
Midrack, Eleanore, Cleveland 11, Ohio
Miller, Lloyd C., New York 16, N. Y.
Moir, John G., Madison 6, Wis.
Mordell, J. Solon, Washington 25, D. C.
Mueller, Florence, Richmond Heights 17, Mo.
Munch, James C., Lansdowne, Pa.
Muroff, John M., Philadelphia 4, Pa.
Neal, Browning A., Buffalo 3, N. Y.
Nehring, Oscar S., St. Louis 7, Mo.
Newman, Barney, Chicago 2, Ill.
*Niemeyer, Gloria, Washington 7, D. C.
O'Connell, C. Leonard, Pittsburgh 5, Pa.
O'Connell, J. F. Regis, Pittsburgh 5, Pa.
Oscar, Stephen W., Cleveland 5, Ohio
Ott, David E., Mansfield, Ohio
Pearlman, Kalman I., Highland Park, Ill.
Phillips, George L., Ann Arbor, Mich.
*Piccoli, Leonard J., New York 22, N. Y.
Pierce, Ethel, South Weymouth 90, Mass.
Pisa, Albert R., Detroit 27, Mich.
*Poe, Charles F., Boulder, Colo.
Powers, Justin L., Washington 7, D. C.
Purdum, W. Arthur, Baltimore 5, Md.
Ramstad, E., Lafayette, Ind.
Reamer, I. Thomas, Durham, N. C.
Redman, Kenneth, College Station, S. Dak.
Richards, Anna C., Montclair, N. J.
*Richardson, J. Edward, Detroit, Mich.
Ritzlin, Philip, Chicago 24, Ill.
Rucker, Theresa M., Cleveland 3, Ohio
Schlossberg, Elias, Phoenix, Ariz.

Schneider, Adela, Houston, Tex.
School of Pharmacy Library, University of Maryland, Baltimore 1, Md.
Scott, Evlyn Gray, Cleveland, Ohio
Sister Laura Stricker, Carville, La.
Sister M. Junilla, O.S.F., Los Angeles 26, Calif.
**Sister M. Teresa (Bramsiepe), Oklahoma City 3, Okla.
Sister Mary Finian Bradley, Long Beach 13, Calif.
Sister Mary John, Toledo, Ohio
Skinner, Emmett H., St. Louis 8, Mo.
Sonnedecker, Glenn, Madison 6, Wis.
Spiotti, Dominic V., Washington, D. C.
Steele, Frank J., Greenwich, Conn.
*Stewart, Newell, New York 20, N. Y.
Stockert, Geraldine, Long Branch, N. J.
Sturner, Francis X., Buffalo, N. Y.
Superstine, Edward, Long Island City, N. Y.
Swain, Robert L., New York 18, N. Y.
Taylor, George W., Milledgeville, Ga.
Taylor, R. L., San Diego, Calif.
Teicher, Philip, Rochester 21, N. Y.
Thomas, Rhea, Greenfield, Ind.
Tomihiro, Todd, San Jose, Calif.
Towne, Charles G., Los Angeles 25, Calif.
Trygstad, Vernon O., Rockville, Md.
Urdang, George, Madison 6, Wis.
von Stanley, Eugene, Trenton, N. J.
Wajert, Agnes P., New Castle, Pa.
Webster, John H., Detroit 7, Mich.
Welch, E. W., Brooklyn 1, N. Y.
Whitney, Harvey A. K., Inkster, Mich.
Wilcox, Paul W., West Point, Pa.
*Wilhelm, R. L., Newark 2, N. J.
Wolfe, Eddie, Washington, D. C.
Wolfgang, Edward J., Evansville, Ind. (1956 Member)
Zimmerman, D. R., New York 22, N. Y.
Zopf, Louis C., Iowa City, Iowa

Canada

Brown, Gorden B., Regina, Sask.
Moir, John G., Vancouver, B. C.
Olynyk, Irene O., Toronto, Ont.
Sister M. Ancilla, Hamilton, Ont.
Sister M. Gerald, Guelph, Ont.
Stauffer, Isabel, Weston, Ont.
Zahalan, Francis, Montreal

*Dues submitted for 1956.
**Dues submitted for 1956 and 1957.

DRUGS

EVALUATED BY

AMA COUNCIL

ON PHARMACY

AND CHEMISTRY

1955

The following additional drugs are those which have been evaluated during 1955 by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in *New and Nonofficial Remedies*. This list is inclusive through December 31, 1955. Monographs on these drugs have appeared in *The Journal of the American Medical Association* under the sections Report of the Council on Pharmacy and Chemistry, New and Nonofficial Remedies, on the dates indicated.

The trade names added by the EDITOR to the following list of drugs were not contained in the references referred to, and were not used in the official reports of the Council on Pharmacy and Chemistry as published in *The Journal of the American Medical Association*.

J.A.M.A. *January 22, 1955*
- Diphemanil (Prantal) Methylsulfate
- Estradiol Cyclopentylpropionate (Depo-Estradiol)
- Oxytetracycline-Polymyxin B
- Stanolopne (Neodrol)
- Viomycin Sulfate

J.A.M.A. *February 5, 1955*
- Cycrimine (Pagitane) Hydrochloride

J.A.M.A. *August 27, 1955*
- Acetyl Sulfisoxazole (Gantrisin-Acetyl)
- Benoxinate (Dorsacaine) Hydrochloride
- Carbinoxamine (Clistin) Maleate
- Cyclopentolate (Cyclogyl) Hydrochloride
- Dextro Amphetamine Sulfate U.S.P.
- Erythromycin Ethyl Carbonate
- Erythromycin Glucoheptonate
- Erythromycin Lactobionate

J.A.M.A. *September 3, 1955*
- Hydrabamine Penicillin G (Compocillin)
- Lente Insulin

J.A.M.A. *September 10, 1955*
- Dimethisoquin (Quotane) Hydrochloride
- Gallamine (Flaxedil) Triethiodide

J.A.M.A. *September 17, 1955*
- Hyphylline (Neothylline)
- Lututrin (Lutrexin)
- Piperazine (Antepar) Citrate
- Piperazine Tartrate
- Poliomyelitis Immune Globulin (Human)
- Vibesate (Aeroplast)

J.A.M.A. *October 1, 1955*
- Protoveratrine A and B (Provell) Maleates
- Sodium Levothyroxine (Synthroid)

J.A.M.A. *October 15, 1955*
- Aminopterin Sodium
- Diatrizoate (Hypaque) Sodium
- Sodium Radio-Iodide (I^{131}) U.S.P.

J.A.M.A. *October 22, 1955*
- Benztropine (Cogentin) Methanesulfonate
- Ethopropazine (Parsidol) Hydrochloride
- Fibrinogen (Human)
- Glucosulfone (Promin) Sodium

J.A.M.A. *October 29, 1955*
- Crotamiton (Eurax)
- Edathamil Calcium-Disodium (Versenate)
- Mephentermine (Wyamine)
- Mephentermine (Wyamine) Sulfate U.S.P.

J.A.M.A. *November 19, 1955*
- Alseroxylon (Rauwiloid)
- Chlorquinaldol (Sterosan)
- Cyclizine (Marezine) Hydrochloride
- Cyclizine (Marezine) Lactate
- Heptabarbital (Medomin)
- Iophenoxic Acid (Teridax)
- Isoflurophate U.S.P. (Floropryl)
- Meclizine (Bonamine) Hydrochloride
- Nylidrin (Arlidin) Hydrochloride
- Rauwolfia (Raudixin)
- Reserpine
- Sodium Radio-Chromate (Cr^{51})

J.A.M.A. *November 26, 1955*
- Metaraminol (Aramine) Bitartrate
- Methoxsalen (Oxsoralen)
- Methscopolamine (Pamine) Bromide
- Methscopolamine (Pamine) Nitrate
- Penthienate (Monodral) Bromide
- Pentolinium (Ansolysen) Tartrate
- Pramoxine (Tronothane) Hydrochloride
- Prednisolone (Delta-Cortef; Hydeltra; Meticortelone; Sterane)
- Prednisone (Deltasone; Deltra; Meticorten)
- Primidone (Mysoline)
- Propantheline (Pro-Banthine) Bromide
- Radio-Gold (Au^{198}) Colloid
- Sodium (Cholografin) Iodipamide
- Thiazolsulfone (Promizole)
- Trypsin (Tryptar), Crystalline
- Warfarin (Coumadin) Sodium

J.A.M.A. *December 3, 1955*
- Furazolidone (Furoxone)
- Radio-Iodinated (I^{131}) Serum Albumin (Human) (RISA)

J.A.M.A. *December 17, 1955*
- Fludrocortisone (Alflorone; Florinef) Acetate

therapeutic TRENDS

edited by WILLIAM JOHNSON

Streptonivicin—A New Antibiotic

Streptonivicin is a new antibiotic produced by an actinomycete, *Streptomyces niveus*. It is said to be active against many gram-positive and some gram-negative bacteria. In a preliminary report by Martin, Heilman, Nichols, Wellman, and Geraci as recorded in *Proc. Staff Meetings, Mayo Clin. 30*:540 (Nov. 16) 1955, streptonivicin was found to be very active *in vitro* and *in vivo* against *Micrococcus pyrogenes*. There apparently is no cross resistance between streptonivicin and penicillin, streptomycin, chloramphenicol, the tetracycline group of compounds, neomycin, bacitracin, and erythromycin, and organisms resistant to them may be fully susceptible to streptonivicin. Laboratory evidence indicates that *M. pyogenes* can become resistant to streptonivicin. Streptonivicin was effective in the treatment of an experimental infection with *M. pyogenes* in mice. The drug is extensively bound by serum proteins and is absorbed into the general circulation when orally administered. Detectable levels in the serum after oral administration persist beyond 12 hours. This study indicated that streptonivicin is distributed in blood, pleural and ascitic fluids, and thyroid tissue, and is excreted in the bile, urine, and feces. Under the conditions of this study, streptonivicin was not detected in the cerebrospinal fluid. Streptonivicin appears to be a relatively nontoxic antibiotic agent after administration in the amounts given in this study. Thus far, no patient receiving the antibiotic has been recognized as having thereby suffered damage to kidneys, liver or hemopoietic system. Some patients to whom the drug was given complained of nausea. The streptonivicin (Albamycin) used for this study was supplied by The Upjohn Company.

Treatment Of Delirium Tremens With Reserpine

Twenty-three patients were treated with reserpine in an attempt to control the symptoms of delirium tremens. Avol and Vogel report in *J. Am. Med. Assoc. 159*: 1516 (Dec.) 1955 that the drug was given parenterally in relatively large doses ranging from 2.5 mg. to 5 mg. in one injection. The patients were free of their symptoms of acute hallucinations in an average of eighteen hours. Most patients were free of their symptoms within twenty-four hours and the shortest period of time noted was nine hours. Despite the relatively large doses utilized, there were no ill-effects noted in this series. Hypertensive cardiovascular disease *per se* is not a contraindication to the use of the drug, although the drug should be used with great caution in these instances. Because of the great variation in reaction to reserpine the dose should be individualized. The authors found that an initial dose of 2.5 mg. to be followed in three hours by another dose of 2.5 mg., if necessary, is fairly safe for all patients. The use of reserpine greatly shortened the time necessary to free these patients of their postalcoholic withdrawal symptoms. Moreover, they are a much easier group to manage from the viewpoint of nursing care. It is believed that the use of reserpine has shown gratifying results in the treatment of delirium tremens and warrants further trial. Ciba Pharmaceutical Products, Inc. supplied the reserpine (Serpasil) for this study.

Neomycin As A Bactericidal Additive To Pyelographic Media

Pyelographic studies were made on 219 occasions by Roth, Kaminsky, and Hess as reported in *J. Urol. 74*:565 (Oct.) 1955 using a two and one-half percent solution of neomycin sulfate in Skiodan, Diodrast, or Urokon. This bactericidal additive has given rise to no recognizable toxicity or mucosal irritation. It is possible, by this method, to carry out retrograde pyelography in spite of urinary tract infections which might previously have been regarded as contraindication to this form of investigation. Under all ordinary conditions two and one-half percent neomycin solutions in standard contrast media have been found to be stable. Neomycin solutions will precipitate out in the presence of many detergents and wetting agents. It is well to add a few drops of neomycin solution to such cleaning agents as are used on catheters and instruments. A prompt white precipitate will indicate inactivation. Neomycin solutions may be autoclaved at 120 degrees for 30 minutes with less than 10 percent loss of potency,

but with a darkening of the solution. Neomycin sulfate (Mycifradin) for this series was supplied by the Upjohn Company.

Sinthron—A New Oral Anticoagulant

Sinthron (Nitrophenyl acetyl-ethyl-4-oxycoumarin) was given orally to 56 patients, 40 of whom had normal pretreatment prothrombin values (80 percent or above, Quick method). The results were compared with those obtained in other individuals treated with Dipaxin, dicumarol phenylindandione, and Tromexan. The aim of therapy was to maintain prothrombin concentration between 20 and 30 percent of normal. Polhemus, Wilson, Willis, Gamble, Griffith, Hodgson, and Duff (Ann Arbor, Mich.) (from an abstract in *Clinical Research Proceedings* Vol. III Nov., 1955) gave a usual initial dose of from 28 to 32 mg. followed by a dose of 16 to 24 mg. on the second day. The average maintenance dose was 6 to 16 mg. daily and varied greatly in the same patient from day to day. The excessive effect of Sinthron was rapidly reversed by oral or intravenous vitamin K_1. Though Sinthron was the most potent of the oral anticoagulants evaluated by this group, the dosage was found difficult to regulate.

6-Aminonicotinamide—A Potent Nicotinamide Antagonist

During the course of investigation on the inhibition of sulfonamide acetylation, it was observed by Johnson and McColl, as reported in *Science* 122:834 (Oct.) 1955, that 6-aminonicotamide was extremely toxic to rabbits. The delayed effect of the compound suggested that 6-aminonicotinamide might be an antimetabolite of nicotinamide. This was confirmed by experiments in rats. In fact, it appears to be the most potent known antagonist of nicotinamide. It is currently under investigation and 6-aminonicotinamide and its cogeners are also being tested for their effect on neoplastic growths.

Potassium Para-Aminosalicylate

Para-aminosalicylic acid or its sodium salt has become well established as a valuable therapeutic agent in the treatment of pulmonary tuberculosis. Unfortunately, there is a relative large percentage of patients who exhibit gastric distress to acid PAS and its salts. This incidence has been reported to be as high as 50 percent in some institutions. In *Antibiotic Medicine 1*:337 (July) 1955, Chernish and Peck describe the use and results obtained with potassium para-aminosalicylate. One hundred and two patients received a daily dose of 12 Gm. of potassium PAS in capsule form for from two weeks to five months. Of 38 patients in this group previously intolerant to other forms of acid PAS or sodium PAS only 6 exhibited signs of gastric intolerance to potassium PAS. Blood PAS concentrations with potassium PAS capsules were higher than with equal doses of sodium PAS. No significant change in electrolyte balance or electrocardiograms was noted in patients receiving potassium PAS. Patient acceptance was said to be excellent.

Cytomel

Cytomel is a newly-discovered, orally active, chemically pure, thyroid-like hormone which exerts its metabolic effect at the cellular level. It is extremely potent as compared with older available thyroid preparations (L-thyroxine, thyroglobulin, and desiccated thyroid) with the distinctive features of rapid onset of action, greater immediate effect, and quick return to pre-treatment status when the drug is withdrawn. In addition to the superior thyroid-like activity, L-triiodothyronine possesses physiological qualities which appear to be of particular value in the treatment of the hypometabolic state, male infertility, and other conditions related to a hormonal imbalance.

L-triiodothyronine differs from L-thyroxine in the absence of one iodine atom in the 5′ position. This change in the chemical structure endows it with distinctive biological effects. Although first isolated from blood plasma and the thyroid gland, it is now prepared synthetically. It occurs as chemically pure, white powder and is available as the sodium salt.

The theory has been advanced that thyroxine, the principal secretion of the thyroid gland, becomes effective at the cellular level through deiodination to the 3,5,3′ triiodo form. Thus L-triiodothyronine should be absorbed directly by the target cells and the latent period required for the body to remove the 5′ iodine atom should be eliminated. The reservoir of unmetabolized exogenous thyroid hormone should be also reduced, providing a more rapid cut-off of effect when the drug is withdrawn. This information was printed in a brochure of the Smith, Kline and French Laboratories. It may also be noted that Cytomel (trademark, Smith, Kline and French Laboratories for 3,5,3′ L-triiodothyronine) is available for investigational use only. It is supplied in tablets containing 5 micrograms and scored tablets containing 25 micrograms of Cytomel—as the sodium salt.

timely drugs

Cordex Tablets

. . . is a combination of prednisolone, 0.5 mg., and acetylsalicylic acid, 300 mg. It is indicated in the treatment of rheumatoid arthritis, osteoarthritis, gouty arthritis, bursitis, etc. Cordex tablets are available from The Upjohn Company.

Cortef Intramuscular

. . . is a suspension containing in each ml. 50 mg. of hydrocortisone in sodium chloride injection with 4 mg. of polysorbate 80 and 5 mg. of carboxymethylcellulose, with benzyl alcohol 0.9 percent as the preservative. Indicated in the treatment of rheumatoid arthritis and related conditions, Cortef for intramuscular use is a product of The Upjohn Company.

Deladumone

. . . is a long acting combination of androgenic and estrogenic hormones recently made available by E. R. Squibb. It is indicated in the treatment of osteoporosis in both males and females.

Deladumone is a sterile solution for intramuscular use containing 90 milligrams testosterone enanthate and 4 milligrams estradiol valerate per ml. This ratio represents an optimal balance between the male and female hormones which essentially neutralizes their potential for unwanted stimulation of sexual organs and structures. The combination is therefore less likely to cause uterine bleeding, breast stimulation, or masculinization in treating the menopausal syndrome. At the same time, the anabolic effects upon protein and bone tissues are additive so that there is greater potential for anabolic stimulation than with either of the hormones alone.

Hormone imbalances which occur during the menopause are more effectively corrected by Deladumone since the actions of the constituent hormones are combined in suppressing gonad-stimulating secretions. Deladumone's slow release of the androgenic and estrogenic hormones simulates the normal secretion of the steroids in men and women. The response to a single injection lasts from two to four weeks, permitting the physician close patient supervision at the desirable intervals. Well tolerated and economical, treatment with Deladumone may be continued for extended periods.

Deladumone is supplied in vials of one and five milliliters. One or two milliliters is administered as a single intramuscular injection.

Doxinate Preparations

. . . containing specially purified dioctyl sodium sulfosuccinate, are being marketed by Lloyd Brothers, Inc., Cincinnati, Ohio. Available in capsule and solution, the preparations act as fecal softeners and are used to prevent and treat constipation. Each capsule contains 20 mg. of dioctyl sodium sulfosuccinate. The one percent solution is for use in infants and children.

Glu-Salgin Capsules

. . . a preparation indicated as an antirheumatic and an analgetic, is available from The Warren-Teed Products Co., Columbus, Ohio. Each capsule of Glu-Salgin contains glucuronolactone, 150 mg.; dipyrone (4-methylamino-1,5-dimethyl-2-phenyl-3-pyrazolone), 100 mg., and salicylamide, 325 mg.

Hydrodyne Tablets

. . . offer a combination of hydrocortisone, 2.5 mg., and aspirin, 300 mg., for use in treating chronic conditions requiring salicylates in conjunction with hydrocortisone. Hydrodyne tablets are available from Sharp & Dohme.

Mycostatin

. . . an antifungal antibiotic recently introduced for therapeutic use, is now available from E. R. Squibb & Sons in a form suitable for use in tissue culture and for other laboratory purposes.

The new antibiotic offers for the first time an agent which effectively controls molds and yeasts but is non-toxic to tissue cells and viruses. It has been of value in experimental or vaccine production of many viruses, including those of polio, hoof and mouth disease, influenza, African encephalitis, and herpes simplex.

For laboratory use, the material is supplied as a finely-divided sterile powder which forms a suspension in aqueous media.

Mycostatin has proved effective in preventing mold and yeast contamination of tissue cultures and of various materials prior to their addition to tissue cultures. Its use is also recommended to suppress fungi in procedures for the isolation of virus from stool specimens, throat swabs, and other highly contaminated materials. According to Squibb, no strains of yeasts or molds significantly resistant to Mycostatin have been encountered.

At the recommended level of approximately 100 units per ml. of medium, Mycostatin is fungicidal. No deleterious effects of any kind have been observed on cells in tissue culture with these concentrations of the antibiotic, and some investigators have reported the routine use of higher concentrations without toxic effects. The suggested level can be exceeded several fold without damage to tissue cells.

The material is supplied in vials containing 500,000 units of the antibiotic. Although its activity varies somewhat among batches, one

milligram of the powder is equivalent to approximately 2,500 units of antibiotic.

Detailed information on the use of Mycostatin in the laboratory is contained in a bulletin entitled "Laboratory Applications of Mycostatin," available from Professional Service Dept., E. R. Squibb & Sons, 745 Fifth Avenue, New York 22, New York.

Myopurin

. . . is a combination of digitoxin (crystalline) and gitalin (amorphous), cardiac glycosides of *Digitalis purpurea*. The preparation can be used in all conditions where digitalis therapy is indicated. The average digitalizing dose of Myopurin is three tablets a day for three or four days. The average maintenance dose is one tablet or 0.25 mg. a day. Myopurin is a product of the E. L. Patch Company, Stoneham, Mass.

Occultest

. . . a diagnostic tablet for the detection of occult blood in urine, is being marketed by Ames Company, Inc.

The importance of testing routinely with Occultest is emphasized by the fact that most patients with microscopic hematuria never see blood in their urines. Yet the presence of a few red blood cells in the urine is often the early warning signal of serious organic disease, and requires immediate investigation to determine the cause. Unlike microscopic examination, Occultest determines the presence of blood whether the cells are hemolyzed or not.

It has been reported in medical literature that even a few red blood cells, demonstrated with certainty in repeated specimens of urines, may denote a lesion as serious as that occuring with gross hematuria; to overlook their presence correspondingly may be tragic. Many serious lesions of the urinary tract first manifest themselves as microscopic hematuria. Bleeding is the first symptom of at least three-fourths of the malignant tumors of the urinary tract, and similarly may be the first warning of other types of both urinary and extra-urinary tract pathology.

Occultest Reagent Tablets are available in bottles of 250. Each tablet contains all necessary reagents standardized for uniformly reliable results. With just one drop of urine, Occultest permits simple and rapid detection of occult blood in urine.

Pabalate-HC Tablets

. . . offer a combination of hydrocortisone, potassium salicylate, potassium *p-aminobenzoate*, and ascorbic acid for the treatment of rheumatoid and other forms of arthritis, acute rheumatic fever, bursitis, fibrositis and neuritis. Pabalate-HC tablets are available from the A. H. Robins Co., Inc., Richmond, Va.

Pediatric Piptal

. . . is a preparation which has been found effective in the treatment of infants' colic. Piptal is a cholinolytic which was developed by Lakeside Laboratories and has been widely prescribed for the management of peptic ulcer. Pediatric Piptal is also indicated for related functional pediatric gastrointestinal disorders.

In clinical investigations, Pediatric Piptal has been administered by dropper about fifteen minutes before feeding time and has usually helped to relieve crying and other symptoms in 24 hours. Drowsiness, flushing and other effects have not been encountered.

The number of feedings required per day has been restored toward normal, in one notable case from 12 to 5, investigators have reported.

Pipizan Citrate Syrup

. . . released by Sharp & Dohme, Division of Merck & Co., Inc., is an effective, easy-to-administer treatment for pinworms and ascariasis (round worms).

The pleasing lime flavor of Pipizan syrup makes it readily acceptable to children and adults. High cure rates have been obtained with the use of Pipizan which eliminates the fasting, special diets, enemas, suppositories, or cathartics in treating patients. Studies have indicated that Pipizan is well tolerated in therapeutic doses even by the smallest children.

Quadrates

. . . (Concentrated Electrolyte Additive Solutions) are being marketed by Cutter Laboratories. A choice of four electrolyte concentrates—Sodium Chloride, Sodium Lactate, Ammonium Chloride and Potassium Acetate—is available in 30 ml. vials. Each Quadrate has a four molar concentration and each ml. of additive contains 4 mEq. of that electrolyte. Quadrates make it possible to tailor-make desired combinations of electrolyte solutions. These 30 ml. Quadrates are packaged only in multipaks of 12.

Stilphostrol

. . . for the management of prostatic carcinoma, has been released by the Ames Company. Chemically, it is diethylstilbestrol diphosphate, each 5 ml. ampule containing 0.25 gram of the active ingredient as a solution of the sodium salt.

Stilphostrol is indicated in prostatic carcinoma patients who have become refractory to other methods of treatment. In such cases it relieves pain and may effect temporary regression of the tumor and its metastases.

It is probably best to begin therapy with the maximum tolerated amounts of Stilphostrol. After the acid phosphatase has been brought to normal and symptomology is controlled, maintenance doses may be required.

Tolerated in higher doses, Stilphostrol also produces fewer side effects than diethylstilbestrol and natural estrogens. Although nausea, vomiting, dizziness and burning sensation in the perineal region have been reported, in no instance has administration of as much as one gram of Stilphostrol resulted in more severe reactions.

Tetrabon SF

. . . is a tetracycline preparation fortified with B complex vitamins and vitamins C and K in a new, mint-flavored, sugar-free, homogenized mixture formulated in ready-mixed form. Tetrabon SF, a product of Chas. Pfizer & Co., is indicated in the treatment of infections caused by a wide variety of gram-positive and gram-negative bacteria. The vitamins provide the nutritional support indicated during periods of stress. The liquid preparation of Tetrabon is well tolerated and offers the convenience of administration and tasty flavor.

BOOK REVIEWS

TEXTBOOK OF PHARMACEUTICAL COMPOUNDING AND DISPENSING. Edited by Rufus A. Lyman, M.D. and Joseph B. Sprowls, Ph.D.; Consulting Editor George Urdang, Sc.D. 7½" x 10¼", 477 pages. Published by J. B. Lippincott Co., Philadelphia. Second edition, 1955. Price $9.75.

In the preface of the First Edition the authors state their objective: "It has been generally agreed that compounding and dispensing is to be considered as *the* pharmaceutical task in which all the scientific knowledge, professional skill and sense of responsibility acquired during the academic education of the student of pharmacy must find their expression and justification This means that the teaching in this field has to be on at least the same level as that in the individual branches of the pharmaceutical curriculum preceding the instruction in compounding and dispensing . . . All in all, this volume is to a great extent, not only a new book but a new venture. Its authors and editors hope that it will help pharmacy keep its place in a period of change."

This same approach to the subject has been developed and enriched in the Second Edition which, in the words of the publisher, has been "Extensively revised, and greatly expanded in order to include in a single volume undergraduate studies in such subjects as: Dispensing Through The Ages; The Prescription; Accuracy in Dispensing; Dosage Forms; Flavors and Odors and Their Pharmaceutical Application; Coloring Agents; Solvents and Solubility; Some Properties of Aqueous Solutions and Their Application to Pharmacy; Parenteral Preparations; Colloids, Emulsions and Suspensions; Dermatologic Pharmaceuticals; Incompatibility and the Incompatibilities of Inorganic Compounds; Incompatibilities of Organic Compounds; The Manufacture of Tablets; Dental Pharmacy; Hospital Pharmacy."

In the Second Edition nine chapters have been added; several chapters have been omitted. Much of the information covered in the deleted chapters has been included in other chapters. It is regrettable that the Chapter on "Inter-professional Relationships" has been deleted even though this subject is included, perhaps with less emphasis in other sections of the book. However, this militates little against its excellence in general and its superiority over the First Edition. An exceptionally good text for undergraduate students, it is an equally efficient reference for every pharmacist and an essential book for the hospital pharmacist.

It is heartening to note that this text for general use in undergraduate study of pharmacy includes a comprehensive chapter on the subject of hospital pharmacy by Doctor George F. Archambault, constituting as it surely does an effective means of placing hospital pharmacy in its proper perspective. For a long time leaders in hospital pharmacy recognized the need for such a text.

Doctor Archambault presents the basic principles of hospital pharmacy in a well-developed and concise manner and offers an efficient guide to proper hospital pharmacy administration. Although he does not preclude the existence of other methods of hospital pharmacy administration equally as acceptable, he determines certain requisites as indispensable in any and every method followed. His accommodating charts, figures, and tables serve to heighten the reader's interest and enthusiasm and lend effectiveness to the chapter's format, while the various divisions and captions make for ready reference. The clear-cut statements of the functions of the Pharmacy and Therapeutics Committee and the purpose and advantages of the hospital formulary are both satisfying and enlightening, while the description of storeroom arrangement and stock control is most excellent.

Although the author fails to mention the Pharmacy Institutes which have enjoyed the annual sponsorship of the Catholic Hospital Association for the past seven years, this probably inadvertent omission may be overlooked in the light of Doctor Archambault's ever successful contributions to their cause.

With characteristic foresightedness Doctor Archambault sounds the alert to a new but extremely important function of the Pharmacy and Therapeutics Committee, i.e., "the periodic review of patients' charts for inconsistencies in medication orders (over-medication in a number of drugs and use of a drug beyond a reasonable period) with a report on findings made at least once annually at staff meetings . . . ." The far-reaching and beneficent effects of such a service cannot be doubted.

SISTER MARY BERENICE

St. Mary's Hospital
St. Louis, Mo.

CUMULATIVE INDEX OF HOSPITAL LITERATURE, 1950-1954. Published by the American Hospital Association, 18 E. Division St., Chicago 10, Ill. 512 pages. Price $5.00.

The American Hospital Association has recently published the 1955 Edition of the *Cumulative Index of Hospital Literature*. This includes references to more than three hundred journals in the hospital and related fields.

Publication of the semi-annual Index began in 1945. In 1949 the first five-year cumulation was prepared, covering periodical literature of the years 1945 through 1949. This second five-year cumulation indexes the literature which has appeared from 1950 through 1954.

Included among the references are approximately two hundred and seventy-five under the subject heading, "Pharmacy Department." These are classified under subheads covering the following: Departmental Relations, Economics, Education and Training, Equipment and Supplies, Formulary, Manufacture, Narcotic Control, Personnel, Planning, Records and Reports, Standards, and Teaching Functions.

Pharmacists concerned with pharmacy practice in hospitals will find this list of references valuable. In addition to those articles listed under "Pharmacy Department," the Index will prove an aid in locating articles concerned with other phases of hospital practice. The complete Author Index is also a helpful aid in locating specific articles when the author is known.

GLORIA NIEMEYER

TEXTBOOK OF PHARMACOLOGY AND THERAPEUTICS, sixth edition, 1955. By Harold N. Wright and Mildred Montag. 8" x 5". 557 pages. Published by W. B. Saunders Company, Philadelphia and London. Price $4.75.

The sixth edition of the text, as with all previous revisions, brings up-to-date subject matter relating to new drugs and their uses. Most noticeable, however, is the new rearrangement and grouping of chapters. With this major change the authors have provided a text which may be used effectively in conjunction with training programs for student nurses under the Unit Plan Integrated with Clinical Nursing.

The thirty-seven chapters of the book are grouped into eleven units having the following main subject headings: Orientation To Pharmacology and Therapeutics; Drugs Used for their Effects on Skin and Mucous Membrane; Anti-Infective Drugs; Drugs Acting on the Nervous System; Drugs Acting on the Cardiovascular System and Blood; Drugs Acting Chiefly on the Smooth Muscle of the Gastrointestinal, Urinary and Respiratory Tracts and Reproductive Organs; Vitamins and Hormones; Therapy of Neoplastic Diseases; Domestic and Industrial Poisoning; Legislation in Regard to Drugs; and History of Pharmacology.

The last chapter, giving a brief outline of the development of pharmacology from ancient times to the present era of discovery and modern research, is a new feature of the sixth edition. This material presented in the orientation program should awaken the interest of the student nurse in this historical drama and alert her to an awareness of pharmacologic progress unfolding daily on the hospital ward. An appendix on Canadian Drug Legislation is part of Unit XI at the insistence of Canadian users. Also, because of Canadian demand, British Pharmacopoeial preparations are again so designated in the sixth edition. A glossary of terms more frequently encountered by the student nurse in pharmacology completes the Unit. The subject index is complete giving all page references to any given subject, the page number of major discussion of a subject appearing in bold type.

A commendable feature of the text is the organization of each unit. A title page for each unit lists the chapters and contents of each. A useful learning aid is the listing at the left of opening paragraph of each chapter the pharmacologic actions to be discussed and the drugs producing each of these. The exercises at the end of each chapter contain many thought stimulating questions and are a test of the student's ability to recall and correlate all data and facts pertinent to the question. The bibliography included at the end of each chapter provides source material from which the interested student may acquire additional information on a particular subject or from which the instructor may select topics for student reports. The selection of illustrations, diagrams and graphs of this text has always provided excellent visual-aid teaching material. The present edition is no exception.

Although the number of new drugs introduced into practice since the fifth edition has been overwhelming, the policy of the authors, with few exceptions, is to describe and discuss only official and N.N.R. drugs. The proprietary names of these drugs follow the official titles. Among the exceptions to this policy of inclusion of official drugs, this reviewer noted the rauwolfia preparations which as yet are unofficial but sufficiently widely used under a number of trade names to require discussion in a text on pharmacology.

The publisher furnishes with the text a Teaching Guide for the Clinical Instructor which may be followed in a teaching program integrating medical and surgical nursing, pharmacology, nutrition and diet therapy with clinical nursing.

The sixth edition of this text does not include any of the material on "Drugs and Solutions" of the previous editions. The authors have published this material (expanded and revised) as a separate work book. Their explanation for the change—partly, because of the rapid expansion in subject matter of pharmacology and therapeutics and partly, because Drugs and Solutions is so frequently taught as a separate unit of instruction. The separation of this subject matter from an already overcrowded subject is logical and justified. It should be welcomed by pharmacology instructors who are expected to give a basic foundation in drugs, their actions, uses and administration in a definite schedule—and not "spatter" in the giving!

The objectives aimed at in any pharmacology teaching program are to develop intelligent trained observers of the effects of drugs and enable them to administer medicines accurately. The sixth edition of this text furnishes a fundamental approach to this objective. It is comprehensive yet concise. It is practical. It handles a subject made difficult with the advent of so many new and complicated drugs and methods of treatment and administration simply and clearly with no sacrifice in objectivity.

HAZEL E. LANDEEN

Sacred Heart School of Nursing
Spokane, Washington

THE DISPENSATORY OF THE UNITED STATES OF AMERICA. Twenty-Fifth Edition. 1955. Editors, Dr. Arthur Osol and Dr. George E. Farrar. 7 x 10¼ x 4. Buckram. Pp. 2139. Published by J. B. Lippincott Company, Philadelphia, Pa., 1955. Price $25.00.

The new Dispensatory represents the greatest collection of recorded information in the long illustrious history of this book. The text is divided into four parts. Part one includes a concise and coherent commentary on each drug listed in the following compendia: *United States Pharmacopeia* XV, *National Formulary* X, *British Pharmacopoeia,* and Volumes 1 and 2 of the *International Pharmacopoeia.* Part two treats similarly that large group of drugs not official in the above mentioned compendia but which comprise an important economic facet of medicinal agents both therapeutically and toxicologically as well as in research. Part three deals with the veterinary application of drugs. The length of this section was doubled in this edition of the Dispensatory. Part four includes an extensive functional index that reflects a continuation of the effective thought apparent in the format of this work.

The alphabetical arrangement of the drugs in each section makes the book easy to use. The consistently well composed text of each monograph is responsible for a continuity and lucidity seldom found in a work of this nature. The authors follow a definite subject discussion for each drug in presenting the following information: (1) official titles; (2) structural formula; (3) trade marked names and suppliers of the drugs; (4) comparison with related drugs; (5) method of synthesis; (6) official description; (7) summary of standards and tests; (8) detailed description of uses introduced by a

brief summary for quick review; (9) pharmacologic actions, with references to original works; (10) therapeutic applications in all diseases discussed; (11) toxicology and contraindications; and (12) dose range, maximum dose and routes of administration.

Some special and timely features that are handled in the text are a complete coverage of hormones, articles on antibiotics, radioisotopes, and discussions on important pharmacological drug classifications, and insecticides and rodenticides.

The Dispensatory continues to be one of the most used pharmaceutical references. It affords a unique type of usability to the pharmacist that could only be duplicated by consulting many reference sources for each monograph read. It is certainly a recommended reference for all practitioners of pharmacy and related professions.

LEO F. GODLEY

THE PHARMACOPEIA OF THE UNITED STATES OF AMERICA, FIFTEENTH REVISION 1955. Prepared by the Committee of Revision and published by the Board of Trustees of the U.S.P. Printed and distributed by the Mack Publishing Co., Easton, Pa. 23 x 14.5 cm. lii + 1178 pp. Price $10.00 ($10.50 foreign).

The U. S. Pharmacopeia, Fifteenth Revision, was published July 1 and became effective on December 15, 1955. While much of its content has been carried over from U.S.P. XIV, scarcely a monograph or chapter was not rewritten in the revision process.

There are 838 monographs of which 242, representing more than 100 new drugs, appear in U.S.P. for the first time. Thus, nearly 30 percent of the monograph section is entirely new, and now fills as much space as was needed in U.S.P. XIV for both the monographs and the section on General Tests and Assays. The groups of drugs showing the greatest increase are the *antihistaminics,* which increase from 2 to 13 (i.e. from 4 to 27 monographs), the *antibiotics,* which go from 5 to 12, and the *diagnostic aids* which go from 9 to 16; the *endocrine preparations,* including cortisone and its related steroids, increase from 18 to 25.

More than one-fifth of the U.S.P. XIV monographs have been dropped.

The graphic formulas are cuts of line drawings which show the chemical structure of the U.S.P. XV drugs with greater clarity.

A new section entitled "Category" appears in each monograph to indicate the main pharmacologic action or pharmaceutical use of the drug or preparation. This information helps particularly in those cases where the U.S.P. title is less well known than the drug's trade name. There are several important changes in titles. Dosage information is increased in that the monographs provide the Range as well as the Usual Dose of the drug.

A change in Calamine Lotion is important to pharmacists. The U.S.P. XIII formula, modified by reducing the amount of bentonite, has been substituted for the U.S.P. XIV formula which was poorly suited for the preparation of Phenolated Calamine Lotion, a new admission to U.S.P. XV.

The general section on General Tests, Processes and Apparatus of U.S.P. XV is larger than its U.S.P. XIV counterpart because of the addition of new material, much of which is of particular interest to pharmacists and teachers of pharmacy. The section has been reorganized completely. There are now seven subsections introduced by a separate table of contents. This latter feature will be especially useful to those who use the book infrequently. Among the new chapters of this section having broad application are those on Chromatography, Radioactivity, and Pharmaceutical Preparations. The chapter entitled "Sterilization" sets forth the general principles of preparing the sterile forms of the U.S.P. drugs and is an up-to-date version of information which appeared in U.S.P. XIII but was not carried over to U.S.P. XIV. Those who have a special interest in the tests and standards for antibiotics will find the chapter on the Microbial Assays of the Antibiotics particularly helpful in that it represents the regulations of the Food and Drug Administration on these assays. Another chapter, on the Design and Analysis of Biological Assays, presents in a highly condensed form a great deal of material which constitutes an adjunct to the U.S.P. biological assays of the vitamins and pharmaco-dynamic drugs.

Since U.S.P. XV is the first revision to appear since the 1950 meeting of the U.S.P. Convention, it includes an abstract of the proceedings of that meeting and a list of the 349 delegates who attended. Also included is a resumé of U.S.P. History as well as the newly revised U.S.P. Constitution and By-Laws.

One important new monograph is that on Purified Water. This sets up standards for water which has been rid of ionized solutes either by the time-honored process of distillation or by removal of unwanted ions with adsorbing resins. Since either kind of water may be used in compounding and since demineralized water is far less costly to produce, there is an important potential economy to pharmacists where *bacteriological purity and freedom from pyrogens are not required.* Pharmacists must bear in mind, however, that small unit demineralizers can become infected rather easily with pathogenic bacteria so as to render good quality water unfit for pharmaceutical purposes even though the solids content has been reduced markedly.

In general, the pharmacopeial titles of the new articles are the common or non-proprietary names which are established in the medical literature of the United States. Usually, they are also the non-proprietary names recommended for international use by the World Health Organization; where an exception is made, the international name generally appears as a synonym.

The term *ml.* has replaced cc. as the standard abbreviation for 1/1000th of a liter. The abbreviation, mcg., is used for 1/1000th of a milligram.

An important section of the new U.S.P. XV chapter on "Pharmaceutical Preparations" bears directly on the extemporaneous preparation of ophthalmic solutions. Ophthalmic solutions are defined for the first time as ". . . sterile, preferably isotonic solutions intended for instillation into the eye." From the standpoint of the dispensing pharmacist the following section deserves close attention: "Aseptic precautions should be exercised in the preparation of ophthalmic solutions compounded extemporaneously. Sterile or freshly boiled purified water, or water for injection, to which a suitable bacteriostatic agent has been added, is preferred as the vehicle. Antimicrobial agents such as phenylethyl alcohol (0.5 per cent), or chlorobutanol (0.5 per cent), are suitable for this purpose except that the latter is decomposed by heat and is incompatible with some drugs."

The U.S.P. XV is an indispensible reference for all practicing hospital pharmacists and should be in the library of each pharmacy department.

Notes and Suggestions

edited by TAYLOR K. MCCAIN

At a recent Seminar on Hospital Pharmacy held in Los Angeles, Mr. Taylor K. McCain, Chief Pharmacist of the V.A. Regional Office in the city, conducted a group participation study of common hospital problems. Among the subjects presented during this discussion, and submitted by Mr. McCain, are the following papers. While these papers are brief, they clearly and concisely present useful suggestions of interest to all hospital pharmacists. Other contributions of this general nature from individuals or representatives of Affiliated Chapters would be welcome for publication.

Simplifying the Dispensing of Sterile Fluorescein

By LILLIE WEIL, Chief Pharmacist
Los Angeles Eye and Ear Hospital

Fluorescein dispensed sterile with safety is a difficult problem for the pharmacist and the physician. Saturating filter paper with a 20 percent solution of the drug and sterilizing the cut strips makes the problem a simple one.[1]

Preparation

1. Make a 20 percent solution of fluorescein sodium.
2. Cut filter paper (fine grain white) in 2 inch strips.
3. Dip filter paper strips one-half inch into the solution.
4. Let moistened paper dry and cut crosswise into small strips.
5. Place strips in screw cap No. 1, 7 dram capsule vial.
6. Put sterilometer in each vial before autoclaving.
7. Autoclave 20 minutes at 105° C.

Use

1. If eye is tearing, use papers dry—the tears dissolve in the fluorescein.
2. If eye is dry or non-tearing, a drop of water or normal saline is placed on paper which is then applied to the conjunctiva.
3. Fluorescein papers are nonirritating.
4. They are convenient to carry in the medical bag.

[1]Kimura, Samuel J.: Fluorescein Paper: A simple means of insuring the use of sterile fluorescein, *Am. J. Ophthalmol.* 34:446 (Mar.) 1951.

Pregelatinized Starch

By MORRIS P. DROOKS, Pharmacy Resident
Veterans Administration Center, Los Angeles

For many years nurses and other medical personnel have prepared starch baths which are used for their soothing action in generalized and itching dermatoses. The usual method of preparation is as follows:[1]

> For cornstarch baths stir ½ to 1 lb. refined, soluble cornstarch into a tubful of water. Starches are made soluble through hydrolysis, for example, by boiling. "Linit" starch for the bath is a brand of finely divided, soluble cornstarch. It is preferably used in the unperfumed form.

Until 1951, this generally accepted method of preparing starch baths was used by this V.A. Center and the time-consuming disadvantages and extra work involved were distinctly understood by a busy nursing profession. This problem was brought to the attention of the Pharmacy Department and a concerted effort was made to relieve this burdensome and frequent nursing procedure.

The various liquid starch preparations were first considered and it was readily determined that starch in solution has a tendency to spoil. Various preservatives, especially small amounts of formaldehyde, were found to be used in some commercial preparations, and were felt to be detrimental for certain tender skin conditions and thereby nullified the soothing effect that starch was to provide.

It was noted that a product called Instant Starch for laundry purposes required only the addition of water, and it soon dissolved with a minimum effort. This was economically unsound for a large quantity operation due to the limited packaging size.

A search led to a bulk source for a precooked starch called Amijel, which is supplied by the Corn Products Refining Corp., Argo, Illinois. This costs approximately $10.00 per hundredweight F.O.B. Consequently, this change has saved considerable nursing time and eliminated much extra work which was encountered in the boiling procedures required and the cleaning up of charred containers.

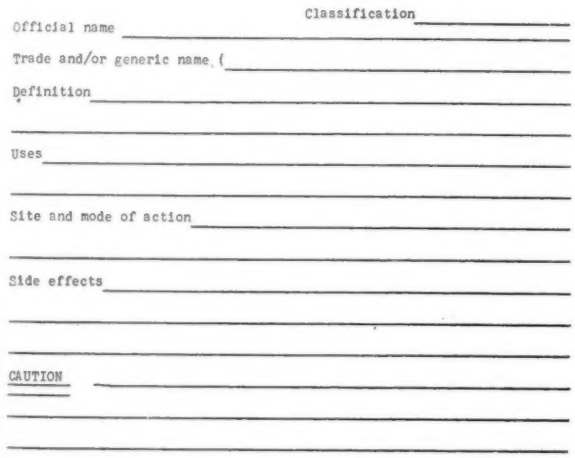
[1] Sulzberger and Wolf: *Dermatologic Therapy in General Practice,* 1943.

A System for Preparing Drug Monographs for the Hospital Formulary

by WENDELL T. HILL, JR.

A recent survey in the United States disclosed that fifty-eight percent of all the hospitals reporting have access to some type of hospital formulary.[1] This study seems to indicate the need for more information concerning the mechanics of preparing a formulary. The purpose of this article is to report a method of writing formulary monographs.

A uniform format is desirable in the hospital formulary. The Pharmacy and Therapeutics Committee should decide which and how much information is to be included in the formulary. Once the format has been established headings can be printed on five by eight inch file cards, allowing space under each heading for entering the information indicated (Figures 1 and 2). The use of the card simplifies the preparation of drug monographs. Brevity is encouraged by the size of the card.


Official name _____ Classification _____

Trade and/or generic name (_____

Definition _____

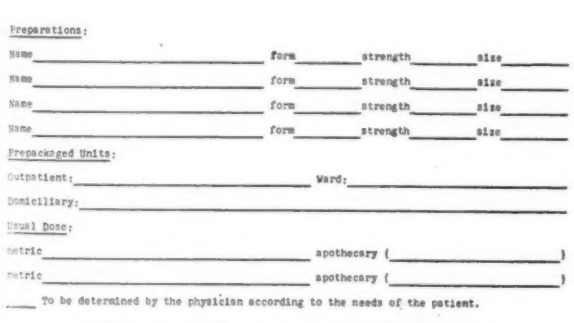
Uses _____

Site and mode of action _____

Side effects _____

CAUTION _____

FIGURE 1. *Front view of formulary card*


Preparations:

Name _____ form _____ strength _____ size _____

Name _____ form _____ strength _____ size _____

Name _____ form _____ strength _____ size _____

Name _____ form _____ strength _____ size _____

Prepackaged Units:

Outpatient: _____ Ward: _____

Domiciliary: _____

Usual Dose:

metric _____ apothecary (_____)

metric _____ apothecary (_____)

___ To be determined by the physician according to the needs of the patient.

FIGURE 2. *Back view of formulary card*

An added feature of this system is its value for maintaining current formulary revisions. A formulary card is made for each new drug accepted by the Pharmacy and Therapeutics Committee, and filed alphabetically by therapeutic classification. Periodically, a formulary supplement may be prepared directly from the information contained on the cards.

This system permits drug monographs for the hospital formulary to be assembled rapidly and it also serves as a file of new drugs accepted by the Pharmacy and Therapeutics Committee.

1. Zugich, John J., *American Professional Pharmacist*, 21,353 (1955).

Delineated Policy for Pharmaceutical Representatives

by SISTER M. JUNILLA O.S.F., Chief Pharmacist
Queen of Angels Hospital, Los Angeles

Recognizing the importance of the professional representative and considering the time-consuming factor that accompanies his visit, established policy clarifies his position.

1. A seven-point policy is set up by chief pharmacist.
2. Policy is written and dated with master and reference copy.
3. Representative signs both copies and leaves master copy in the department.
4. Both copies are signed by administrator and chief pharmacist.
5. Clarified policy is an asset to pharmaceutical representative and a time saver to pharmacy schedule.

Policy Governing Calls of Pharmaceutical Representatives

1. Drug firm representatives shall limit their calls to the Pharmacy Department *only*.
2. They shall call at the time and day assigned on or agreed upon by the pharmacist.
3. They shall not explore the hospital, seek or solicit interviews with any other department.
4. Interviews with physicians or supervisors of departments shall be held in the lobby of the hospital only.
5. Orders for drugs shall not be solicited of physicians on department service for use in the hospital.
6. We will not be responsible for solicited drugs which are delivered without previous approval by the pharmacist.
7. We will appreciate the cooperation of each representative's observance of this policy.

Signed _____
Administrator

_____
Chief Pharmacist

_____
Representative

Impressions...

an American pharmacist in Europe

by GLENN SONNEDECKER, *Secretary, American Institute of the History of Pharmacy*

Second in a series of informal columns dispatched to THE BULLETIN by Dr. Sonnedecker during his year in Europe as a Fulbright Research Scholar and Fellow of the Guggenheim Foundation.

The Chemist's Shop

WALK DOWN ANY STREET in England and you are not likely to see a "pharmacy" or "drugstore." The chemist (*i.e.*, pharmacist) prefers to label his shop "Chemist" or "Chemist and Druggist," which he can justify and defend on the basis of the historical genesis of modern English pharmacy. Continuing efforts to popularize the less ambiguous terms "pharmacist" and "pharmacy" have not yet broken the tradition. If you do stumble upon an English "drugstore" it is not the counterpart of the American drugstore, having neither the supervision by a pharmacist nor the legal prerogatives. (Similarly, the German "drogist" is not a pharmacist, nor considered a part of pharmacy.)

The idea that an English chemist's shop is the closest overseas kin to an American drugstore, however, finds much to support it. Yet, significant differences are apparent. The average English pharmacy looks very small to an American. The modern pharmacist reportedly has extended somewhat his range of stock, but still restricts himself largely to prescriptions (commonly 40 to 50 a day), packaged medicines, cosmetics, personal grooming and hygienic aids, photographic supplies, baby foods, and possibly some candy or take-home fruit drinks. If you ask a pharmacist why he does not stock hardware or serve meals, he probably will be somewhat at a loss to answer: It seems not in his line of work; it would not be dignified; anyway he has no space for it. It would not be far wrong to visualize the ordinary pharmacy as no larger than the combined space occupied in a neighborhood drugstore of the U.S.A. by the particular lines of products mentioned. Probably the persisting English tradition of having many types of small specialized shops helps keep the pharmacy more professional in appearance and scope than its American counterpart.

The small chemist's shop likewise manages to show a certain dignity from the outside, however modest. Window displays are commonly at least semi-professional, although not infrequently crowded with a good many signs for proprietary medicines or photographic products. Multiple-unit organizations (notably Boots, Ltd.) have gained a strong position throughout England and tend to be more like an average American drugstore without soda fountain or food. They do maintain, however, a more orderly and dignified appearance than the ordinary American chainstore.

It impresses me as remarkable, not that the English pharmacy is so much less elegant than most of those on the Continent, but rather that it retains as much professional dignity as it does without the legal regulations that assure, in many other European countries, that the pharmacy presents a face to the public in keeping with its services.

In a substantial minority of English Pharmacies, the practice of optometry provides a dignified and rather lucrative supplement to pharmaceutical practice. Not so many young pharmacists are now qualifying as dispensing opticians, however, as standards are raised. The pharmacist must pass the same examination as those who wish to specialize in optometry alone, but his pharmaceutical education exempts him from the preliminary examination.

The "rota system," which became nationwide during the war years, signifies a new life for many pharmacists, particularly in the many one-man pharmacies. Under this system pharmacies are open only from 9 a.m. to 6 p.m., six days a week. (Optional closing during lunch hour.) "Rota duty," taken in rotation by pharmacists in a given area, involves remaining open for an extra hour from 6 to 7 p.m. (to fill prescriptions from the evening office hours of physicians) and for one or two hours on Sunday, plus a certain amount of emergency service "on call."

There have been scattered violations of the system. But there appears to be a determination to preserve its effectiveness among the men who are finding for the first time normal lives with their families and an opportunity to develop interests and activities outside of pharmacy in the same manner as people in other walks of life.

CURRENT LITERATURE

edited by SISTER MARY ETHELDREDA, *St. Mary's Hospital, Brooklyn, N.Y.*

AMERICAN PROFESSIONAL PHARMACIST

MILLER, O. H.: Bulk Compounding Costs in the Hospital Pharmacy, *Am. Profess. Pharmacist 21*:1110 (Dec.) 1955.

Considers the importance of controls and presents practical modifications of elaborate methods.

HOSPITAL MANAGEMENT

WHITCOMB, W.: What Makes a Chief Pharmacist Efficient, *Hosp. Management 81*:90 (Jan.) 1956.

Describes the desirable qualifications of an efficient Chief Pharmacist.

HOSPITAL PROGRESS

SISTER M. REBECCA: Christ As Apothecary, *Hosp. Progress 36*:46 (Dec.) 1955.

Describes the theme of a Christmas display of paintings and drugs in the School of Pharmacy Library at the University of North Carolina.

SISTER M. REBECCA: Pharmacy's Heritage, *Hosp. Progress 36*:46 (Dec.) 1955.

A thought on the sublime ideals that should permeate a pharmacist's activities.

BARTILUCCI, A. J.: Continuing the Education of Hospital Pharmacists, *Hosp. Progress 36*:86 (Dec.) 1955.

The author reviews a few of the various opportunities available for continuing education in the rapidly moving field of hospital pharmacy.

THE HOSPITAL PHARMACIST (CANADA)

MORRISON, F. A., MOIR, J. G., *and* WALKER, G. C.: Panel: Development of a Practical Manufacturing Program in the Hospital, *Hosp. Pharm. (Canada) 8*:337 (Nov.-Dec.) 1955.

A series of papers on manufacturing in hospital pharmacy as presented at the 1955 Canadian Institute on Hospital Pharmacy. Includes economic aspects and hospital policies, considerations in setting up a parenteral solutions program, and equipment for manufacturing in hospital pharmacy.

HUGES, N. H.: Opportunities for Professional Advancement of Hospital Pharmacists, Hosp. Pharm. (Canada) *8*:323 (Nov.-Dec.) 1955.

The Dean of the University of Toronto School of Pharmacy discusses the present status of hospital pharmacy in Canada pointing out the opportunities for members of the Canadian Society of Hospital Pharmacists.

HOSPITAL TOPICS

GDALMAN, L.: Prepackaging of Stock Solutions Saves Nursing Time, Speeds Service, *Hosp. Topics 33*:17 (Dec.) 1955.

Advantages of prepackaging in the pharmacy is discussed along with specific procedures for handling stock.

HOSPITALS

LOW-BEER, B. V. A.: Organizing and Controlling the Use and Safe Handling of Isotopes, *Hospitals 29*:51 (Dec.) 1955.

Describes effectively the use of isotopes, the requirements for handling, facilities necessary, records and reports to be maintained and safety precautions which should be taken.

THE MODERN HOSPITAL

BAIN, J. A.: A Statistics Primer for Medical Workers, *Modern Hosp. 85*:92 (Oct.) 1955.

Presents the general principles of statistics and necessary formulas for the handling of simple cases.

DE MAAR, J.: A Synopsis of Biological Assay, *Modern Hosp. 85*:106 (Dec.) 1955.

A description of methods used in biological assay with particular reference to standards and units international standardization, assays, methods and standards for specific drugs. Includes bibliography.

SOUTHERN HOSPITALS

NICHOLS, T.: Steps Toward a Solution Program, *South Hosp. 23*:64 (Oct.) and *23*:53 (Nov.) 1955.

Points out the seven factors which must be considered in establishing a program for the manufacture of intravenous solutions. Includes details concerning the type and location of equipment used.

J. AM. PHARM. ASSOC., PRACT. PHARM. ED.

HAUSER, V.: Changing Aspects in Pharmaceutical Practice—Viewed Internationally, *J. Am. Pharm. Assoc., Pract. Pharm. Ed. 16*:618 (Oct.) and *16*:677 (Nov.) 1955.

A report to the International Pharmaceutical Federation covering a survey of the economic problems in pharmacy throughout the world.

STREETER, R. E.: CAVER, P., and NOBLES, W. L.: Carbopol 934 as a Dermatological Vehicle, *J. Am. Pharm. Assoc., Pract. Pharm. Ed. 16*:671 (Nov.) 1955.

A report on the use of Carbopol 934 (carboxy polymethylene) as an ointment base.

RIEGELMAN, S., VAUGHAN, D. G., *and* OKUMOTO, M.: Compounding Ophthalmic Solutions, *J. Am. Pharm. Assoc., Pract. Pharm. Ed. 16*:742 (Dec.) 1955.

Suggestion for preparing ophthalmic solutions with considerations for vehicle, preservative, and compounding.

AMERICAN JOURNAL OF PHARMACY

KLARMAN, E. G.: The Role of Chemical Disinfection in Hospitals, *Am. J. Pharm. 127*: 239 (July) 1955.

Factors to be considered in the selection of a chemical disinfectant for use in hospitals are discussed.

ASHP affiliates

Illinois Chapter

More than 100 hospital pharmacists and guests met at the St. Clair Hotel in Chicago for the January 10 meeting of the Illinois Chapter of the ASHP. Following greetings by President Dwight Deardorff, guests were introduced by Mr. Morris Gordon, Chairman of the Reception Committee. The speaker, Dr. George F. Archambault, Immediate Past President of the ASHP, was introduced by Mr. Paul Parker, Vice-President of the Illinois Chapter. Dr. Archambault spoke on "Hospital Pharmacy Law," followed by a question period. Hospital pharmacists attending the meeting showed a great deal of interest in the subject discussed.

The Illinois Chapter has recently inaugurated a membership campaign to interest every hospital pharmacist in the area in the local group as well as the national organizations.

Houston Area Society

A special meeting of the Houston Area Society was called on December 10 to give hospital pharmacists an opportunity to talk with Miss Gloria Niemeyer, Secretary of the ASHP. A dinner meeting was held at the Club Normandie with approximately forty pharmacists and guests attending.

At the October meeting of the Houston Society, plans were formulated for the Texas Seminar and the National Institute which is to be held in Austin in June. The group also discussed the Chapter's project, "History of Pharmacy" and "New and Old Formulas."

At the November meeting, members of the Houston Area Society heard Dr. Walter H. Mannheimer, Associate Professor of Anesthesiology at Baylor Medical School and Chief of Anesthesiology at the VA Hospital in Houston. He spoke on "Modern Concepts of Anesthesiology."

Greater Kansas City Association

Members of the Hospital Pharmacists' Association of Greater Kansas City met for a business meeting at St. Joseph Hospital in Kansas City on November 8. Officers for the coming year were elected and Mr. Charles W. Loomis, the new president, asked for suggestions for future programs.

At the December 6 meeting held at the Kansas City University School of Pharmacy, Dr. L. Eisenbrandt spoke on the use of radioactive isotopes in medicine. He covered the nature of isotopes, instruments used in measuring activity, dangers involved, and the pharmacists' role in administration of radioactive materials.

Announcement was made regarding the fact that the Greater Kansas City Association has been accepted as an affiliate of the ASHP and plans were outlined for a membership campaign. Also, new committee appointments were made as follows: *Publicity*—Ethel Branard; *Membership*—John Cygiel, *Chairman;* and W. F. Wilhelm; *Program*—J. C. Chipman, *Chairman;* Sister Rose Bernard; and Sister Eva Marie.

Northern California Society

Mrs. Marie B. Kuck, Chief Pharmacist at St. Luke's Hospital in San Francisco, was elected President of the Northern California Society at the November 8 meeting. Other officers to serve during the 1956 term include Vice-President Eric Owyang, Secretary Jessie Lavender, and Treasurer Matilde Herby.

The December 13 meeting of the Northern California Society of Hospital Pharmacists was held at the Highland-Alameda County Hospital in Oakland. Miss Clara Henry introduced the guest speaker, Mr. Floyd Heffron, Executive Secretary of the State Board of Pharmacy. There was discussion regarding the recent directive issued by the Board and Mr. Heffron pointed out that it was not directed to those hospitals which have pharmacists.

Two new members introduced at the December meeting of the Northern California Society included Miss Betty A. Keil and Mr. Lucas Leong.

Mississippi Society

The Mississippi Society of Hospital Pharmacists is formulating plans for a joint meeting with hospital administrators in the State. Following the theme, "Hospital Pharmacy Forum for Hospital Administrators in Mississippi," it is anticipated that such a meeting will offer an opportunity to "sell" hospital pharmacy.

Akron Area Society

Members of the Akron Area Society met at St. Thomas Hospital in Warren, Ohio, on December 6. Business covered included discussion of the Society's project, communications and reports. Miss Hildah Douglas reported on the Hospital Pharmacy Seminar sponsored by the Western Pennsylvania Society on November 17. The Secretary reported on a Pricing Survey recently completed by the Akron Society.

Announcements regarding the Student Project were made by Mr. Russell Lovell, Chairman of the Committee. He indicated that six colleges of pharmacy are being invited to participate in the 1956 program. Other members serving on the Committee include Jack Hovis, Jack Smittle, Elnorah Drury, Robert Baird, and Gene Hovis.

Included on the program was a brief review of the changes made in the new U.S.P. and N.F. Also reviewed was the A.Ph.A. Manual No. 101 on Accidental Poisoning. This

was followed by a general discussion on emergency set-ups for accidental poisoning in different hospitals. These discussions were led by Mr. Theodore Mink, Peoples Hospital, Akron.

The program also included showing of the film "Going My Way," which was made available by Parke, Davis and Company.

Southern California Society

Members of the Southern California Society of Hospital Pharmacists met at Queen of Angels Hospital in Los Angeles on November 14. Following the business session, during which new officers for 1956 were elected, Sister Mary Junilla, Chief Pharmacist at Queen of Angels Hospital, sponsored a Hobby Show.

Hobbies were divided into eleven exhibits with thirty-five pharmacists from twenty-one hospitals participating. Considerable enthusiasm was shown in the program and exhibitors were called on to tell briefly the "how and why" of their hobby. Sister Junilla gave a short talk on "Hobbies" and their meaning from a personality index, artistic, intellectual anl psychological point of view.

Among the hobbies exhibited were needle and wood craft, music, sports, art, antiques, lapidary, plastics, photography, and cookery.

New officers of the Southern California Society who will be installed at the January meeting include President, Emily Alekna; Vice-President, Kikuyo Munemori; Secretary, Mary Grant; and Treasurer, Marie Tilly.

Rhode Island Society

The Rhode Island Society of Hospital Pharmacists met at the Roger Williams General Hospital on November 17. Highlighting the program was a discussion of drug detailing in hospitals with three medical service representatives participating. These included Mr. Charles McManus of Eli Lilly and Company; Mr. Stephen Scafarella of E. R. Squibb; and Mr. Mario Pistacchio of Schering Corporation. The discussion offered an opportunity for mutual exchange of ideas and suggestions for providing better service to hospitals.

Greater New York Chapter

The December meeting of the Greater New York Chapter of the ASHP was held at St. Mary's Hospital in Hoboken, N. J. During the business session plans for future programs and meeting dates were outlined. The program included a film on Thorazine which was made available by Smith, Kline and French Laboratories.

Western New York Chapter

On November 9, members of the Western New York Chapter of the ASHP held a luncheon meeting on the Campus of the University of Buffalo. Following the business session, Dean Daniel Murray of the University of Buffalo School of Pharmacy spoke on drug costs.

Midwest Sisters' Association

The November 17 meeting of the Midwest Association of Sister Pharmacists was held at St. Anne's Hospital in Chicago. Prior to the business session, the group toured the Isotope Laboratory and was given details regarding handling radioisotopes in the hospital. The program also included a report on lead poisoning and the effectiveness of the drugs which are now available in its treatment. This report, presented by Sister M. Hortensis, is the first in a series to be considered at future meetings. Future studies will cover pediatric, geriatric and poisonings in general.

A report on the Pharmacy Institute held at the University of Chicago in June was presented by Sister Ann Gallagher.

Oklahoma Society

Members of the Oklahoma Society of Hospital Pharmacists were guests of the Medical Service Society of America (Oklahoma Chapter) on November 26 at a luncheon meeting held at the Lockett Hotel in Norman. The principal speaker was Mr. Raymond Crews, Administrator of University Hospitals, Oklahoma City, Okla. Following the subject, "Why Does Hospital Care Cost Today What it Does," Mr. Crews emphasized the increase in operating expenses, shorter work week for employees, increase in salary levels, increased quantity of specialized services per admission, and other factors.

A business meeting of the Oklahoma Society of Hospital Pharmacists was held in the Pharmacy Library at St. Anthony Hospital in Oklahoma City on December 28. The purpose of the meeting was to formulate plans for the coming year. The President, Sister Mary Teresa, made the following Committee appointments: *Program* — George West, *Chairman;* Ralph Reed; and David McLemore. *Resolutions*— Stokes Baggett, *Chairman*; Joe Davis; and Marguerite Jones. *Membership*—Marguerite Jones, *Chairman;* Wanda Lee Teakell; and Ethel Brown. *Constitution and By-Laws*—Joe Davis, *Chairman;* Ralph Reed; and Betty Powers.

Northeastern New York Society

Members of the Northeastern New York Society of Hospital Pharmacists were guests of Lederle Laboratories, Pearl River, N. Y., on November 6 and 7. The group was entertained at the Dellwood Country Club on Sunday and toured the Laboratories on Monday.

Northeastern New York Society Visits Lederle

as the president sees it

CLAUDE BUSICK
St. Joseph's Hospital, Stockton, California

Sincere thanks are due Vice-President Milton Skolaut for taking over this page in the Sept.-Oct. issue of THE BULLETIN. I wanted the members to meet him. He has most ably represented the SOCIETY at several meetings this year when it was impossible for me to be present even with the wings that have become a part of my life. Air travel has lessened the distance between the West and East coasts but there are times when the West and East can't meet.

Now is the time for members to be thinking about the Annual Meeting in Detroit in April. Choose your delegates to the House of Delegates with care. They will be speaking for you. The opening meeting on April 8 will be your opportunity to express your desires if your chosen delegate represents you as you want him or her to do. Committee Chairmen should be giving thought to the reports of their committees which will be given at this time.

OREGON CHAPTER MEETING

On December 14 and 15 your President had the pleasure of visiting with many of the pharmacists of the Oregon Chapter of Hospital Pharmacists in Portland, Oregon.

The pharmacies I toured were well staffed and efficiently operated. Several of the pharmacists said they were using time saving devices and scientific procedures gained at the Hospital Pharmacy Institutes.

I spoke to the group at the dinner meeting on the activities of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS. The meeting was well attended by hospital pharmacists, hospital administrators and assistant administrators. All were interested in better patient care.

Sterile ophthalmic solutions for hospital patients has long been a pet project of mine. Mr. Fred Turville's set up in the Emmanuel Hospital seemed so easy and efficient that even a small hospital should not deny this service to patients.

NORTHERN CALIFORNIA CHAPTER OF HOSPITAL PHARMACISTS

On January 10th in San Francisco I took greetings from the SOCIETY to the Northern California Society of Hospital Pharmacists when officers for 1956 were installed.

Dean Troy C. Daniels of the College of Pharmacy of the University of California was the speaker. His timely topic was "The Encroachment of Federal Legislation on the Profession of Pharmacy."

A new book was introduced at the San Francisco meeting. It would be a great help in any pharmacy library. It is the "Handbook of Poisons" by Robert H. Dreisbach M.D., Ph.D., Lange Medical Publications, Los Altos, California.

TEXAS SEMINAR

I am looking forward to the Eighth Annual Seminar in Austin, Texas. This Seminar has become a classic. Much praise is due those who contributed so generously to these meetings. One can hardly afford to miss a meeting and still keep abreast with modern hospital pharmacy. The social part of the two days plays an important part in the interesting program. The Texan's have a slogan, "Work hard when you work and play just as hard when you play."

SEMINARS VS. INSTITUTES

The leaders of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS have been considering the question: Should there be more institutes throughout the nation? Or should there be one National Institute and stress more local seminars? We have much to consider in making such a decision. Weekend seminars would add to the attendance. Many pharmacists cannot get away for a week long course.

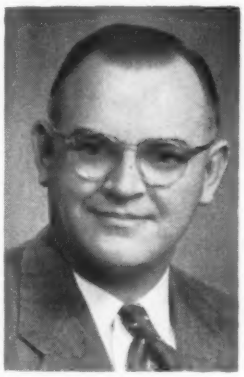
There is much to be gained from these refresher courses whether they are geared to two days or one week.

We should consider the service that could reach a greater number of our membership.

C. L. Busick

NEWS

William Johnson to Edit Therapeutic Trends



Mr. William Johnson, Assistant Chief Pharmacist at Bronson Methodist Hospital in Kalamazoo, Michigan, has been appointed to the editorial staff of THE BULLETIN. He will edit the section known as "Therapeutic Trends."

Mr. Johnson, a native of Greenfield, Indiana, is a graduate of Purdue University School of Pharmacy. He has had experience in both retail and hospital pharmacy and was employed by the Panama Canal Company as a pharmacist from October, 1949 until April, 1953. In the Canal Zone, he worked in hospitals and outpatient clinics. Since 1953 he has held his present position at Bronson Methodist Hospital in Kalamazoo.

Moravec Appointed Pharmacy Editor of Hospital Management

Mr. Daniel Moravec has been appointed Pharmacy Editor of *Hospital Management,* one of the leading publications in the hospital field. Mr. Moravec, Director of Pharmacy Service at Lincoln General Hospital in Lincoln, Nebraska, is well known to hospital pharmacists. He is a member of the A.Ph.A. and the ASHP and is currently serving as President of the Nebraska Society of Hospital Pharmacists. He has contributed to the literature of hospital pharmacy and is well known for his work in establishing the formulary of the Nebraska State Medical Association which has been accepted generally by the hospital and the medical profession in Nebraska.

Mr. Moravec holds a Bachelor of Arts degree, a Bachelor of Science degree in Pharmacy, and a Master of Science degree in Physiology-Pharmacology. He is presently an instructor in hospital pharmacy at the College of Pharmacy in the University of Nebraska.

C.H.A. Annual Convention

The forty-first Annual Convention of the Catholic Hospital Association of the United States and Canada will be held in Milwaukee, Wisconsin, May 21 to 24. The theme of the program will be "Education, Research, and Patient Care."

Meeting in pre-convention session or simultaneously with the Catholic Hospital Association will be the Conference of Catholic Schools of Nursing, the Purchasing Institute, the Institute for Hospital Dietitians, Conference on Medical Technology, the Institute for Hospital Pharmacists, the Medical Record Library Institute, the Bishops' Representatives, the Chaplains' Conference, the Institute for X-ray Technicians, and a special two-day program for Hospital Auxiliaries.

Oliver Steppig Honored

Mr. Oliver Steppig, Chief Pharmacist at the Alexian Brothers' Hospital in St. Louis, is one of the recipients of the Annual Awards for Distinguished Service to Medicine and Pharmacy made by the Alumni Association of the St. Louis College of Pharmacy and Allied Sciences. Mr. Steppig, a Past President of the Missouri State Board of Pharmacy, has played an active role in pharmaceutical organizations, both locally and nationally. He has served on several ASHP Committees and has taken an active role in the Hospital Pharmacists' Association of Greater St. Louis.

Among the others receiving awards for service to Pharmacy are Mr. Fred W. Nehring, Professional Service Manager, E. R. Squibb and Sons and a former hospital pharmacist; Dean Arthur F. Schlichting, St. Louis College of Pharmacy and Allied Sciences; and Mr. Leroy A. Weidle, Jr., President-Elect, American College of Apothecaries and Vice-President, Knight Drug Company, St. Louis.

VA Pharmacists in Midwest Meet

Nineteen Chief Pharmacists from Veterans Administration hospitals in the Midwestern States met for an intra-VA Conference in St. Louis in December. Also present were Mr. Vernon Trygstad, Director, Pharmacy Service, and Mr. Robert Statler, Pharmacy Specialist, Program Development and Training, both from the VA Central Office, Washington, D. C.

*Conference of Veterans Administration Pharmacists, St. Louis, Mo. Dec. 14 - 15, 1955—*FRONT ROW SEATED LEFT TO RIGHT: *Victor H. Crouch, Memphis, Tenn.; Sewall K. Kepner, North Little Rock, Ark.; Robert A. Statler, Pharmacy Specialist, VA Central Office, Washington, D. C.; Edward C. O'Brien, M.D., Director, Professional Services, VAH, St. Louis, Mo.; R. T. Westman, M.D., Area Medical Office, St. Louis, Mo.; John W. Claiborne, Jr., M.D., Manager, VA Hospital, St. Louis, Mo.; Vernon O. Trygstad, Director, Pharmacy Service, VA Central Office, Washington, D. C.; Earl P. Porter, Muskogee, Okla.; John C. Cygiel, Kansas City, Mo.; Ewell J. Payne Excelsior Springs, Mo.; Darris L. Branscum, Little Rock Ark.;* SECOND ROW STANDING LEFT TO RIGHT: *Robert L. Tucker, Oklahoma City, Okla.; Frank L. Nutter, Outwood, Ky.; Raymond Rush, Marion, Ill.; Joel D. Lohr, Louisville, Ky.; Thomas C. Burton, Wichita, Kans.; Harold W. Smith, Poplar Bluff, Mo.; Daniel Zimmerman, St. Louis, Mo.; Robert L. Terrell, Muskogee, Okla.; Arthur C. Walther, Wadsworth Kans.; L. Jack Leonard, Fayetteville, Ark.; William D. Lindmark, Topeka, Kans.; John R. Mosley, Little Rock, Ark.; Norman E. Hammelman, St. Louis, Mo.*

The two-day agenda covering mutual administrative and professional problems included the following papers:

"The Pharmacist and Public Relations," by Charles A. Dailey, Ph.D., Chief Clinical Psychologist, VA Hospital, St. Louis.

"Pharmacology and the Development of New Drugs," by Cecil P. Headlee, Ph.D., Associate Professor of Pharmacology, St. Louis College of Pharmacy.

A demonstration on "The Use of Radioisotopes in Medicine," by Dr. John W. Freis and associates from the Department of Radiology, VA Hospital, St. Louis.

During a dinner social, the Conference participants were addressed by Mr. M. R. Kneifl, Executive Secretary of the Catholic Hospital Association and instructor in the Department of Hospital Administration, St. Louis University.

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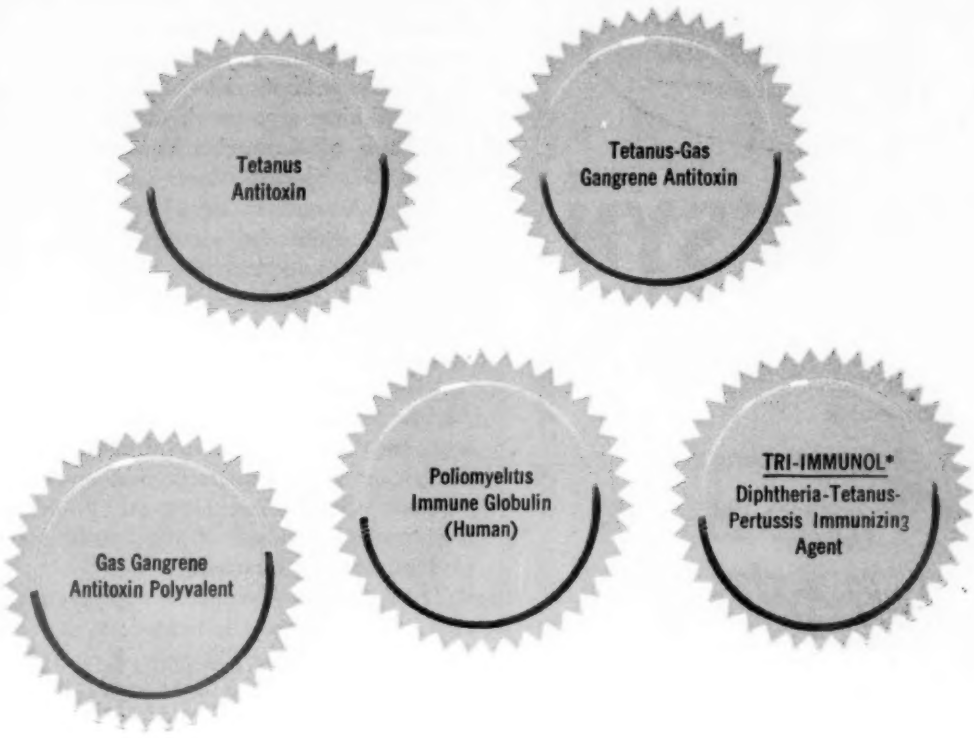

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Vitamin B_{12}	15 mcgm.
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The Veterans Administration is planning to hold similar educational Conferences for its pharmacists in other sections of the country.

Nichols Accepts New Position

The appointment of Mr. Terry B. Nichols as Director of Pharmaceutical Services has been announced by Dr. F. D. Mott, Medical Administrator of the Miners Memorial Hospital Association which is establishing a network of ten hospitals in the coal fields of Kentucky, West Virginia and Virginia. Mr. Nichols comes to the staff from the Veterans Administration Hospital in Birmingham, Alabama, where he was chief of the Pharmacy Service. Prior to that time he was chief pharmacist at the Veterans Administration Domiciliary in Thomasville, Georgia, as well as the Obion County General Hospital in Union City, Tennessee.

A graduate of Howard College, Birmingham, Alabama, Mr. Nichols is a member of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, the American Pharmaceutical Association and the Alabama Society of Hospital Pharmacists. He is currently president of the Southeastern Society of Hospital Pharmacists.

The following have been appointed as pharmacists in the hospitals indicated:

Alfred D. Brooks, Pikeville, Ky.; James Brewer, Hazard, Ky.; Francis Manfred, McDowell, Ky.; Norman Johnson, Harlan, Ky.; Guy T. Noe, Harlan, Ky.; Hughes Reid, Whitesburg, Ky.; Elmer Nollau, Beckley, W. Va.; Mrs. Edna Ruppenthal, Beckley, W. Va.; Jack C. Kirkland, Williamson, W. Va.; Charles Freudenberger, Williamson, W. Va.; Victor Canaipi, Man, W. Va.; Jere Doss, Wise, Virginia and William S. Clarke, Jr., Middlesboro, Ky.

Organon Announces New Appointments

Raphael M. Nacca has been named Executive Vice-President and a Director of Organon, Inc. Mr. Nacca, formerly Vice-President in charge of Marketing for the same company, is a graduate of Rutgers University College of Pharmacy. He has been with Organon in various promotional and marketing positions since 1940.

Mr. James Greco has recently been appointed Manager of Hospital and Institutional Sales for Organon. Mr. Greco, who started with the company in 1939 as a representative, has been consecutively, district supervisor, district manager, and most recently Eastern Division Manager. He is a graduate of Columbia University College of Pharmacy and holds membership in the A.Ph.A. and ASHP as well as numerous other pharmaceutical organizations. Mr. Greco assumes direction of a new department, which has been created in line with Organon's program of expansion.

P.H.S. Grant to A.Ph.A.

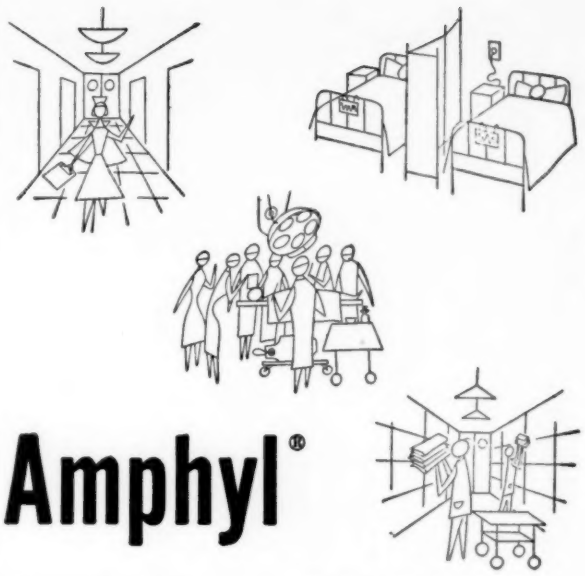
The American Pharmaceutical Association has been named the recipient of a $36,000 grant from the United States Public Health Service for the purpose of carrying out an audit of pharmaceutical services in hospitals. This is one of eleven research grants made from an appropriation of $1,200,000 included in funds for the Hospital Survey and Construction Program.

The study project is to be carried out through the Division of Hospital Pharmacy of the A.Ph.A. and ASHP. The principal investigator and program director for the audit is Don E. Francke, Director of the Division of Hospital Pharmacy. Serving as project director is Mr. Clifton Latiolais who is a native of Lafayette, La. A graduate of Loyola University, New Orleans, Mr. Latiolais also received his Master of Science Degree in Hospital Pharmacy from the University of Michigan in 1952 and served an internship in hospital pharmacy at the same institution. From 1952 to 1954, he was Assistant Chief Pharmacist at the University of Chicago Clinics. Since 1954, he has been Chief Pharmacist at Strong Memorial Hospital, Rochester, N. Y. During World War II, Mr. Latiolais served in the Army Air Corps.

The audit of pharmaceutical services will seek to determine what constitutes good pharmaceutical service for patients in hospitals of various sizes and types. A preliminary pilot study will first be made on a regional basis and from analysis of the facts determined, an evaluation standard will be developed for additional regional studies. The specific objectives of the audit as outlined in the application to the Public Health Service are: 1. To determine the elements required to perform the pharmaceutical service as established by the facts obtained in the survey; 2. To improve the pharmaceutical aspects of medical care for the hospital patient; 3. To provide essential pharmaceutical service to the hospital and the medical and allied staffs; 4. To establish a standard of pharmaceutical practice for hospitals of various sizes and types.

Plans are underway for setting up the machinery for carrying out the study. It is anticipated that the facts acquired in the audit will have a tremendous effect on hospital pharmacy practice in the United States and will also be the basis for providing better pharmaceutical services for patients in hospitals.

The Division of Hospital Pharmacy was organized in 1947 as an administrative unit to coordinate activities of the American Pharmaceutical Association and the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS. Both organizations have contributed immeasureably toward establishing and



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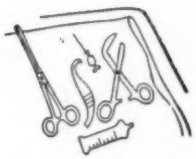

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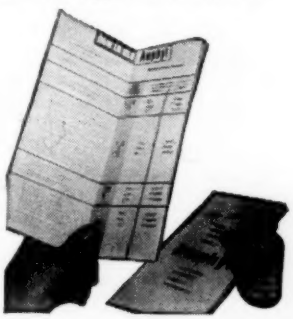
1. Klarmann, E. G.; Wright, E. S., and Shternov, V. A.: Applied Microbiology 1:19 (Jan.) 1953.



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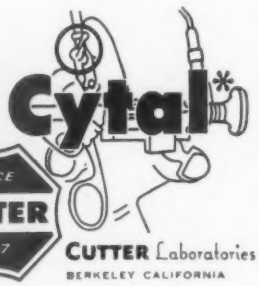

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†Schulte, et al., "Clinical Use of Cytal in Urology," Jrnl. of Urology, May 1954.

implementing standards for pharmacy practice and providing services in the field of hospital pharmacy. The grant made by the Public Health Service offers an opportunity to extend the work of the Division and serve as a guide to future activities in this field.

A.A.A.S. Meets in Atlanta

Representatives of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS participated in the Pharmacy Section of the 1955 Convention of the American Association for the Advancement of Science. Meetings were held in Atlanta, Ga., December 27 through December 29. Dr. George F. Archambault served as the SOCIETY's official representative and he is also a member of the Section's Committee-at-Large for 1956. The Secretary of the Section is Professor John E. Christian, School of Pharmacy, Purdue University, Lafayette, Ind.

During the two day meeting, a total of thirty contributed papers on original studies were reported and one symposium and one panel discussion were held. The chief interest as shown by attendance was in the Symposium on the Applications of Nucleonics to the Health Professions and to the Panel Discussion on Hazardous Household Chemicals and Agricultural Poisons.

Several outstanding papers on subjects relating to hospital pharmacy practice were presented at one session presided over by Dr. Archambault. Abstracts of some of the papers which are of particular interest to hospital pharmacists are included below. The complete papers will be published in future issues of various hospital and pharmaceutical publications.

Managing the Affairs of the Pharmacy Committee, by Joseph P. Crisalli, U.S. Public Health Service Hospital, New Orleans, La.

The objectives of the Pharmacy Committee are discussed, pointing to the value of the Committee as a tool of hospital management. No attempt is made to justify the entity known as the Pharmacy Committee, for in the author's opinion, its worth has already been proven.

The problem remains to make the Pharmacy Committee effective where ineffective, and efficient where the management of its activities can be enhanced. How can this be done? One approach is through the application of long recognized, well-thought-out, principles of conference techniques in order to produce worthwhile meetings; through planning the meeting itself, and providing the means for communicating information to those who are affected by Committee decisions.

The duties and responsibilities of the Committee officers are discussed, with particular reference to those of the Secretary. An attempt is made to present guide lines for those who would like to establish a Pharmacy Committee at their hospital, as well as for those who wish to improve the effectiveness of their Committee.

A Preliminary Study of Medication Injection Costs in a Hospital, by J. A. Hunter and Associates, U. S. Public Health Service Hospital, Detroit, Mich.

The development in recent years of single-dose disposable unit medication for parenteral drug therapy has created a problem for the hospital administrator. The obvious convenience and ease of administration of drugs given by this method as well as its accompanying superior patient care practices, in particular the elimination of this possible hospital source of hepatitis infection as well as patient and employee sensitivities, have made it attractive; however, the apparent difference in cost of drugs given by this and the conventional syringe-and-needle system has made the hospital administrator reluctant to approve the newer method. Because of the savings in personnel time, particularly in nursing and central supply, claims have been made that the cost to the hospital is less by the use of single-dose disposable units in spite of the higher drug costs. Obviously, there is a considerable differential with the disposable units costing more when compared to raw drug costs.

Several workers have attempted to evaluate this problem with conflicting results. In an effort to resolve the question of whether the single-dose disposable unit method of drug administration actually costs the hospital less than drugs given by the conventional method, a study was made at the U.S. Public Health Service Hospital (a 366-bed hospital), Baltimore, Maryland, in the spring of 1955. The present paper constitutes a preliminary report.

The purpose of the study was to determine the actual direct cost to a specific hospital of a single dose of a drug given by the conventional syringe-and-needle method and the cost to the hospital of the same drug given by the single-dose closed system. Three types of medication were selected for the first phase of the study: a tablet narcotic, a multiple-dose vial narcotic solution, and a multiple-dose vial viscid suspension. Work-flow charts were developed and all direct costs, including personnel time, were identified. By this method, the actual cost to the hospital of administering a single dose of a drug was determined.

This phase of the study concludes that the calculated cost of administering an injection by the conventional syringe-and-needle technique was, exclusive of drug costs, 22.4 cents for morphine, 20.5 cents for meperidine, and 17.3 cents for injectable antibiotics.

The main advantages claimed for the single-dose closed system of injectables are: (1) Insures accuracy of dosage; (2) Furnishes a sterile product and a sharp needle; (3) Removes a strongly suspected source of hepatitis infection; (4) Lessens dangers of sensitivities and allergic reactions among professional workers and patients; (5) Drug is available for immediate use; (6) Frees significant personnel time; (7) Less chance of deviation by addicts (narcotics); and, (8) Eliminates waste by breakage and incomplete emptying of vials.

To determine the actual direct cost to a hospital of these same drugs given by the closed-unit method and to attempt to evaluate the cost differential in terms of whether or not conversion to the closed-unit system is justified will constitute the concluding phase of this study.

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Stamper, L. Carl, 4402 Rudy Lane, Louisville

MARYLAND
Martin, Ensign Richard E., U. S. Naval Hospital, Bainbridge
Wesbury, Stuart A. Jr., U.S.P.H.S. Hospital, Baltimore

MASSACHUSETTS
Fuld, Richard, 814 Blue Hill Ave., Dorchester

MISSOURI
Bobbett, Adelaide R., 1041 Blendon Pl., St. Louis

NEW JERSEY
Bellino, Angelus G., 67 Cutler, Newark

NEW YORK
Boose, Robert A., 140 Durham Ave., Buffalo (A)
Einbinder, Harold, 3000 Brighton 12th St., Brooklyn
Eisen, Henry, 96 Schernerhorn St., Brooklyn (A)
Little, Margaret E., 128 Woodell Ave., Buffalo (A)
Speciale, James V., 31 Avery Ave., Lackawanna
Vey, Caryl H., Post Office, Germantown

NORTH DAKOTA
Sister Anne Josephine Mercale, St. John's Hospital, Fargo

OHIO
Hollman, Iris J., 738 Moran Ave., Toledo
Nevel, Charles W., 17301 Milburn, Cleveland (A)

PENNSYLVANIA
Bourn, Ivan F., 521 S. 42nd St., Philadelphia
Earner, Kathleen, 303 Taylor Ave., Linwood (A)
Frattone, Aurelio A., 626 Carpenter St., Philadelphia
Hesling, Jacqueline Anne, 607 W. Sixth, Chester
Kessler, Herman, 1959 N. 31st St., Philadelphia
Lynch, Otto E., 4421 Larchwood Ave., Philadelphia
Magee, Margaret M., 422 Vankirk St., Philadelphia
Wieand, Myrtle M., 431 Chestnut St., Reading

RHODE ISLAND
Murray, Edward J. Jr., 38 Greene St., East Greenwich

TEXAS
Kelly, Guy T. Jr., Methodist Hospital of Dallas, P. O. Box 5999, Dallas
Liesch, William A. Jr., 1608 N. 7th St., McAllen
O'Hara, Billie E., 10627 Doud, Bellaire (A)
Pratley, Gus, 3820 Ave. S½, Galveston

UTAH
Barrett, Gayle J., 862 E. S. Temple No. 3, Salt Lake City

VIRGINIA
Austin, Major William L., 36 Kennedy St., Alexandria

WASHINGTON
Okiyama, Elaine, 1633 34th Ave., Seattle

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MEMBERSHIP DUES

New Members of the SOCIETY as well as those who are delinquent will want to note the following excerpt taken from the ASHP By-Laws, Chapter V, Article 4:

"The period of membership shall coincide with the period of membership in the American Pharmaceutical Association. Dues are payable and due on the anniversary date of this period. Membership in the SOCIETY and the obligation for dues will continue from year to year unless a member's resignation, signed by the member, is received by the Secretary prior to the end of the year for which dues have been paid.

"Any member in arrears for dues for one year shall cease to be a member of the SOCIETY, provided that at least two weeks before his name is removed from the rolls, the Secretary shall send him a written notice of his delinquency together with a copy of the By-Laws pertaining to the subject. Such a person may be reinstated as a member provided his arrears have been paid and payment of current membership dues is made."